

Boulder Atmospheric Observatory in AMS anywhere:

The Boulder Atmospheric Observatory
J. C. Kaimal, J. E. Gaynor
Journal of Climate and Applied Meteorology
Volume 22, Issue 5 (May 1983) pp. 863-880
Abstract

The Boulder Atmospheric Observatory (BAO) is a unique research facility for studying the planetary boundary layer and for testing and calibrating atmospheric sensors. The facility includes a 300 m tower instrumented with fast- and slow-response ...

[\[Abstract\]](#) [\[PDF \(1537 KB\)\]](#) [\[Add to Favorites\]](#)

- Measurement Errors in Vertical Wind Velocity at the Boulder Atmospheric Observatory
D. Skibin, J. C. Kaimal, J. E. Gaynor
Journal of Atmospheric and Oceanic Technology
Volume 2, Issue 4 (December 1985) pp. 598-604
doi: 10.1175/1520-0426(1985)002<0598:MEIVWV>2.0.CO;2
Abstract

This paper describes an effort to identify instrumental and flow-related contributions to the mean vertical velocity offsets observed by sonic anemometers on the Boulder Atmospheric Observatory's 300 m tower. A simple technique to remove these ...

[\[Abstract\]](#) [\[PDF \(492 KB\)\]](#) [\[Add to Favorites\]](#)

- A Climatology of Gravity Waves and Other Coherent Disturbances at the Boulder Atmospheric Observatory during March–April 1984
F. Einaudi, A. J. Bedard Jr., J. J. Finnigan
Journal of the Atmospheric Sciences
Volume 46, Issue 3 (February 1989) pp. 303-329
Abstract

We present a climatological study of gravity waves and other coherent disturbances at the Boulder Atmospheric Observatory, during the period mid-March-mid-April 1984. The data were collected by a network of microbarographs, and by sensors on the ...

[\[Abstract\]](#) [\[PDF \(2280 KB\)\]](#) [\[Add to Favorites\]](#)

- Near-Neutral Surface Layer Turbulence at the Boulder Atmospheric Observatory Tower: Evidence of Increasing Vertical Turbulence with Height
Brent M. Bowen
Journal of Applied Meteorology
Volume 39, Issue 5 (May 2000) pp. 716-724
doi: 10.1175/1520-0450-39.5.716
Abstract

Wind and turbulence profiles were analyzed during breezy, near-neutral conditions at the Boulder Atmospheric Observatory tower to quantify the effects of an abrupt 20- to 30-m increase in terrain located 3–5 km west of the tower. Results indicate ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(137 KB\)\]](#) [\[Add to Favorites\]](#)

- Wind Velocity and Convergence Measurements at the Boulder Atmospheric Observatory Using Path-Averaged Optical Wind Sensors
Mu-King Tsay, Ting-I. Wang, R. S. Lawrence, G. R. Ochs, R. B. Fritz
Journal of Applied Meteorology
Volume 19, Issue 7 (July 1980) pp. 826-833
Abstract

In a cooperative field study of the planetary boundary layer, three optical wind sensors were placed around a 300 m meteorological tower in a 450 m equilateral triangle 3–4 m above the terrain. It was found that the convergence measured by the ...

[\[Abstract\]](#) [\[PDF \(479 KB\)\]](#) [\[Add to Favorites\]](#)

- Meteorological Tower Measurements of a Surface Cold Front
M. A. Shapiro
Monthly Weather Review
Volume 112, Issue 8 (August 1984) pp. 1634-1639
Abstract

measurements from the Boulder Atmospheric Observatory meteorological research tower are used to describe the structure and physical processes of a strong surface cold front. Analysis reveals that the horizontal gradients in temperature and wind ...

[\[Abstract\]](#) [\[PDF \(357 KB\)\]](#) [\[Add to Favorites\]](#)

- Errors in Second Moments Estimated from Monostatic Doppler Sodar Winds. Part II: Application to Field Measurements
S. E. Gaynor, L. Kristensen
Journal of Atmospheric and Oceanic Technology
Volume 3, Issue 3 (September 1986) pp. 529-534
doi: 10.1175/1520-0426(1986)003<0529:EISMEF>2.0.CO;2
Abstract

In this paper we use the theoretical results presented in Part I of this paper to correct turbulence parameters derived from monostatic sodar wind measurements in an attempt to improve the statistical comparisons made with the sonic anemometers ...

[\[Abstract\]](#) [\[PDF \(328 KB\)\]](#) [\[Add to Favorites\]](#)

- The Influence of Gravity Waves on Radiometric Measurements: A Case Study
M. T. Decker, F. Einaudi, J. J. Finnigan
Journal of Applied Meteorology

Volume 20, Issue 10 (October 1981) pp. 1231-1238
Abstract

During the 1978 PHOENIX experiment at the Boulder Atmospheric Observatory in Colorado, the presence of atmospheric gravity waves was detected by various independent remote sensing instruments. Fluctuations in the zenith atmospheric radiation were ...

[\[Abstract\]](#) [\[PDF \(583 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ The Frontal Hydraulic Head: A Micro- α Scale (~1 km) Triggering Mechanism for Mesoconvective Weather Systems
M. A. Shapiro, Tamara Hampel, Doris Rotzoll, F. Mosher
Monthly Weather Review
Volume 113, Issue 7 (July 1985) pp. 1166-1183
Abstract

Measurements from the NOAA Boulder Atmospheric Observatory (BAO) 300 m tower, the National Center for Atmospheric Research (NCAR) Sabreliner aircraft, and the NOAA GOES-5 satellite, give evidence for the cross-front scale collapse of ...

[\[Abstract\]](#) [\[PDF \(2001 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Capability of Surface-Based Clear-Air Doppler Radar for Monitoring Meteorological Structure of Elevated Layers
Earl E. Gossard, Russell B. Chadwick, Thomas R. Detman, John Gaynor
Journal of Climate and Applied Meteorology
Volume 23, Issue 3 (March 1984) pp. 474-485
Abstract

Radars and acoustic sounding systems sense properties of the turbulence structure of the atmosphere. If atmospheric turbulence can be related to the mean gradient parameters, Doppler radars and acoustic sounders can provide information about ...

[\[Abstract\]](#) [\[PDF \(885 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ A Comparison of Two Sonic Anemometers and Fast-Response Thermometers
John E. Gaynor, Christopher A. Biltoft
Journal of Atmospheric and Oceanic Technology
Volume 6, Issue 1 (February 1989) pp. 208-214
doi: 10.1175/1520-0426(1989)006<0208:ACOTSA>2.0.CO;2
Abstract

In an experiment conducted at the Boulder Atmospheric Observatory (BAO), comparisons were made between two types of sonic anemometer and thermometer systems. One sonic anemometer was a single-axis system manufactured by Campbell Scientific, Inc., ...

[\[Abstract\]](#) [\[PDF \(483 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Meso- and Microscale Features of a Colorado Cold Front
George S. Young, Richard H. Johnson
Journal of Climate and Applied Meteorology
Volume 23, Issue 9 (September 1984) pp. 1315-1325
Abstract

Data from the NOAA BAO (Boulder Atmospheric Observatory) tower and the PROFS (Program for Regional Observing and Forecasting Services) surface mesonet network have been used to detect the meso- and microscale flow patterns associated with the passage ...

[\[Abstract\]](#) [\[PDF \(925 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ A High-Power, Dual-Frequency Monostatic Acoustic Sounder for Studying the Atmospheric Boundary Layer
Steven M. Babin, Robert E. Miller, John R. Rowland
Journal of Atmospheric and Oceanic Technology
Volume 10, Issue 4 (August 1993) pp. 486-492
Abstract

Microwave propagation conditions in the lower marine troposphere are evaluated using gradients of radio refractivity profiles. An inexpensive, weather-resistant system for Continuous monitoring of radio refractivity conditions in the lower marine ...

[\[Abstract\]](#) [\[PDF \(667 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Spectral Characteristics of the Convective Boundary Layer Over Uneven Terrain
J. C. Kaimal, R. A. Eversole, D. H. Lenschow, B. B. Stankov, P. H. Kahn, J. A. Businger
Journal of the Atmospheric Sciences
Volume 39, Issue 5 (May 1982) pp. 1098-1114
Abstract

The paper describes a convective boundary layer experiment conducted in April 1978 at the Boulder Atmospheric Observatory, and examines the spectral behavior of wind velocity and temperature from the Observatory's 300 m tower, from aircraft ...

[\[Abstract\]](#) [\[PDF \(1252 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ The Impact of Clouds on the Shortwave Radiation Budget of the Surface-Atmosphere System: Interfacing Measurements and Models
Robert D. Cess, Seth Nemesure, Ellsworth G. Dutton, John J. Deluisi, Gerald L. Potter, Jean-Jacques Morcrette
Journal of Climate
Volume 6, Issue 2 (February 1993) pp. 308-316
Abstract

Two datasets have been combined to demonstrate how the availability of more comprehensive datasets could serve to elucidate the shortwave radiative impact of clouds on

both the atmospheric column and the surface. These datasets consist of two ...

[\[Abstract\]](#) [\[PDF \(620 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Relationship of the Variances of Temperature and Velocity to Atmospheric Static Stability—Application to Radar and Acoustic Sounding
Earl E. Gossard, A. Shelby Frisch
Journal of Climate and Applied Meteorology
Volume 26, Issue 8 (August 1987) pp. 1021-1036
Abstract

The relationship between the variances of temperature and vertical velocity fluctuations is examined experimentally and theoretically. Comparison of the variance data and the mean gradient data recorded on the 300 m tower at the Boulder ...

[\[Abstract\]](#) [\[PDF \(1254 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Comparison of Wind Monitoring Systems. Part I: In Situ Sensors
P. L. Finkelstein, J. C. Kaimal, J. E. Gaynor, M. E. Graves, T. J. Lockhart
Journal of Atmospheric and Oceanic Technology
Volume 3, Issue 4 (December 1986) pp. 583-593
doi: 10.1175/1520-0426(1986)003<0583:COWMSP>2.0.CO;2
Abstract

It has recently become clear through advances in both theoretical and experimental meteorology, that improvements in modeling the transport and dispersion of pollutants will require on-site measurements of the atmosphere. This requirement has in ...

[\[Abstract\]](#) [\[PDF \(823 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Analysis of Nighttime Drainage Winds in Boulder, Colorado during 1980
Bruce W. Hootman, William Blumen
Monthly Weather Review
Volume 111, Issue 5 (May 1983) pp. 1052-1061
Abstract

Characteristics of nighttime drainage winds that occurred along the eastern slope of the Rocky Mountains around Boulder, Colorado during the calendar year 1980 are examined. The data used for this study were acquired from the Boulder Wind Network ...

[\[Abstract\]](#) [\[PDF \(833 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Wave and Turbulence Structure in a Shallow Baroclinic Convective Boundary Layer and Overlying Inversion
Ming Yu Zhou, D. H. Lenschow, B. B. Stankov, J. C. Kaimal, J. E. Gaynor
Journal of the Atmospheric Sciences
Volume 42, Issue 1 (January 1985) pp. 47-57
Abstract

Data from the Boulder Atmospheric Observatory (BAO) are used to investigate the wave and turbulence structure of the convective atmospheric mixed layer and the overlying inversion. Three cases are discussed, one in considerable detail, in which ...

[\[Abstract\]](#) [\[PDF \(753 KB\)\]](#) [\[Add to Favorites\]](#)

- Wave-Turbulence Dynamics in the Stably Stratified Boundary Layer
F. Einaudi, J. J. Finnigan
Journal of the Atmospheric Sciences
Volume 50, Issue 13 (July 1993) pp. 1841-1864
Abstract

New data obtained at the Boulder Atmospheric Observatory (BAO) has been compared with a linear stability analysis of the background atmospheric state as measured by rawinsonde ascents. Good agreement was obtained between measured wave parameters ...

[\[Abstract\]](#) [\[PDF \(1780 KB\)\]](#) [\[Add to Favorites\]](#)

Determining Surface Solar Absorption from Broadband Satellite Measurements for Clear Skies: Comparison with Surface Measurements

Robert D. Cess, Ellsworth G. Dutton, John J. Deluisi, Feng Jiang
Journal of Climate
Volume 4, Issue 2 (February 1991) pp. 236-247
Abstract

Two separate datasets both of which provide measurements of net downward shortwave radiation have been combined, so as to provide a means of critically examining methods for transferring satellite measurements to the surface. This is further ...

[\[Abstract\]](#) [\[PDF \(960 KB\)\]](#) [\[Add to Favorites\]](#)

- The Three-Dimensional Structure of Convection in the Atmospheric Surface Layer
J. M. Wilczak, J. E. Tillman
Journal of the Atmospheric Sciences
Volume 37, Issue 11 (November 1980) pp. 2424-2443
Abstract

During April 1978, a field experiment was undertaken at the Boulder Atmospheric Observatory (BAO), near Boulder, Colorado, to investigate convective plumes in the atmospheric surface layer.

The plume translational velocities are determined for a ...

[\[Abstract\]](#) [\[PDF \(1363 KB\)\]](#) [\[Add to Favorites\]](#)

- Plume Dispersion in the Convective Boundary Layer. Part I: CONDORS Field Experiment

and Example Measurements

W. L. Eberhard, W. R. Moninger, G. A. Briggs

Journal of Applied Meteorology

Volume 27, Issue 5 (May 1988) pp. 599-616

doi: 10.1175/1520-0450(1988)027<0599:PDITCB>2.0.CO;2

Abstract

Project CONDORS (CONvective Diffusion Observed by Remote Sensors) measured the dispersion of a nonbuoyant plume in the highly convective boundary layer. Laboratory and numerical models have predicted vertical profiles of a passive tracer that are ...

[\[Abstract\]](#) [\[PDF \(1651 KB\)\]](#) [\[Add to Favorites\]](#)

- Remote Sensing of Boundary Layer Temperature Profiles by a Scanning 5-mm Microwave Radiometer and RASS: Comparison Experiments
E. R. Westwater, Y. Han, V. G. Irisov, V. Leuskiy, E. N. Kadyrov, S. A. Viazankin
Journal of Atmospheric and Oceanic Technology
Volume 16, Issue 7 (July 1999) pp. 805-818
doi: 10.1175/1520-0426(1999)016<0805:RSOBLT>2.0.CO;2
Abstract

Two techniques for deriving low-altitude temperature profiles were evaluated in an experiment conducted from November 1996 to January 1997 at the Boulder Atmospheric Observatory (BAO). The first used a scanning, single wavelength, 5-mm (60 GHz) ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(260 KB\)\]](#) [\[Add to Favorites\]](#)

- Buoyancy and Pressure Perturbations Derived from Dual-Doppler Radar Observations of the Planetary Boundary Layer: Applications for Matching Models with Observations
Tzvi Gal-Chen, Robert A. Kropfli
Journal of the Atmospheric Sciences
Volume 41, Issue 20 (October 1984) pp. 3007-3020
Abstract

The technique developed by Gal-Chen in 1978 is used to derive vertical velocities, buoyancy, and pressure perturbations from dual-Doppler radar observations of the planetary boundary layer (PBL). Several approaches to verification are pursued. ...

[\[Abstract\]](#) [\[PDF \(1026 KB\)\]](#) [\[Add to Favorites\]](#)

- Low-Frequency Atmospheric Acoustic Energy Associated with Vortices Produced by Thunderstorms
A. J. Bedard
Monthly Weather Review
Volume 133, Issue 1 (January 2005) pp. 241-263
doi: 10.1175/MWR-2851.1
Abstract

An infrasonic observatory collocated with the Colorado State University CHILL radar during the summer of 1995 permitted unique comparisons between severe storm kinematics and detected acoustic energy at subaudible frequencies near 1 Hz. Radar ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(1090 KB\)\]](#) [\[Add to Favorites\]](#)

- A Look Back on Two Decades of Doppler Sodar Comparison Studies
Gennaro H. Crescenti
Bulletin of the American Meteorological Society
Volume 78, Issue 4 (April 1997) pp. 651-673
Abstract

This paper is a compilation of the results obtained from various Doppler sodar comparison experiments conducted over the last 20 years. These studies have attempted to quantify the uncertainties in sodar-derived values of the horizontal wind ...

[\[Abstract\]](#) [\[PDF \(541 KB\)\]](#) [\[Add to Favorites\]](#)

- Analysis of Ducted Motions in the Stable Nocturnal Boundary Layer during CASES-99
David C. Fritts, Carmen Nappo, Dennis M. Riggan, Ben B. Balsley, William E. Eichinger, Rob K. Newsom
Journal of the Atmospheric Sciences
Volume 60, Issue 20 (October 2003) pp. 2450-2472
Abstract

Data obtained with multiple instruments at the main site of the 1999 Cooperative Atmosphere–Surface Exchange Study (CASES-99) are employed to examine the character and variability of wave motions occurring in the stable nocturnal boundary layer ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(1399 KB\)\]](#) [\[Add to Favorites\]](#)

- Modulation of Small-Scale Turbulence by Ducted Gravity Waves in the Nocturnal Boundary Layer
Y. P. Meillier, R. G. Frehlich, R. M. Jones, B. B. Balsley
Journal of the Atmospheric Sciences
Volume 65, Issue 4 (April 2008) pp. 1414-1427
doi: 10.1175/2007JAS2359.1
Abstract

Constant altitude measurements of temperature and velocity in the residual layer of the nocturnal boundary layer, collected by the Cooperative Institute for Research in Environmental Sciences (CIRES) Tethered Lifting System (TLS), exhibit ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(1283 KB\)\]](#) [\[Add to Favorites\]](#)

- Analysis of Gravity Waves Generated at the Top of a Drainage Flow
Samuel Viana, Enric Terradellas, Carlos Yagüe
Journal of the Atmospheric Sciences

Volume 67, Issue 12 (December 2010) pp. 3949-3966

doi: 10.1175/2010JAS3508.1

Abstract

Drainage or katabatic flows are common mesoscale circulations established as a result of differential radiative cooling of near-surface air masses in sloping terrain. The initial irruption of these flows, with sudden shifts in wind speed and ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(5204 KB\)\]](#) [\[Add to Favorites\]](#)

- Comments on “Evaluation of the Accuracy with which Dry Deposition Can Be Measured with Current Micrometeorological Techniques”

H. Sievering

Journal of Climate and Applied Meteorology

Volume 26, Issue 5 (May 1987) pp. 652-652

Abstract

[\[Abstract\]](#) [\[PDF \(96 KB\)\]](#) | [Erratum](#) [\[Add to Favorites\]](#)

- Comments on “Lateral Dispersion from Tall Stacks”

Gary A. Briggs

Journal of Climate and Applied Meteorology

Volume 26, Issue 12 (December 1987) pp. 1779-1780

Abstract

A few minor errors in a paper by Hanna are noted and several questions are raised about apparent inconsistencies. One question is why substantial enhancement of σ_y , by buoyancy was noted for the Bull Run data but was unmentioned for the Kincaid ...

[\[Abstract\]](#) [\[PDF \(149 KB\)\]](#) [\[Add to Favorites\]](#)

- Using Wavelets to Detect Trends
William D. Neff, Richard J. Lataitis, Guest Editors

Journal of Atmospheric and Oceanic Technology

Volume 14, Issue 3 (June 1997) pp. 337-337

[\[Citation\]](#) [\[Full Text\]](#) [\[PDF \(17 KB\)\]](#) [\[Add to Favorites\]](#)

- Comparison of Three Methods for Calculating the Standard Deviation of the Wind Direction

D. Bruce Turner

Journal of Climate and Applied Meteorology

Volume 25, Issue 5 (May 1986) pp. 703-707

Abstract

Three methods to calculate wind direction standard deviation are evaluated. Although eight hours of wind data show no significant differences between the methods, synthetically generated data having standard deviations near the maximum possible ...

[\[Abstract\]](#) [\[PDF \(306 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Mixed Layer Spectra from Aircraft Measurements
G. S. Young
Journal of the Atmospheric Sciences
Volume 44, Issue 9 (May 1987) pp. 1251-1256
Abstract

Vertical velocity and temperature spectra from the 1978 Phoenix convective boundary layer aircraft flights are discussed. Both the vertical velocity spectra and the temperature spectra are normalized using procedures which are based on mixed ...

[\[Abstract\]](#) [\[PDF \(424 KB\)\]](#) | [Erratum](#) [\[Add to Favorites\]](#)

- ❑ Transducer-Shadow Effects on Turbulence Spectra Measured by Sonic Anemometers
John C. Wyngaard, Shi-Feng Zhang
Journal of Atmospheric and Oceanic Technology
Volume 2, Issue 4 (December 1985) pp. 548-558
doi: 10.1175/1520-0426(1985)002<0548:TSEOTS>2.0.CO;2
Abstract

We show that the horizontal turbulent velocity components measured by the common sonic anemometer array can suffer attenuation and crosstalk as a result of the flow blockage caused by the acoustic transducer assemblies. Using an analytical model ...

[\[Abstract\]](#) [\[PDF \(702 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Estimating the Depth of the Daytime Convective Boundary Layer
J. C. Kaimal, N. L. Abshire, R. B. Chadwick, M. T. Decker, W. H. Hooke, R. A. Kropfli, W. D. Neff, F. Pasqualucci, P. H. Hildebrand
Journal of Applied Meteorology
Volume 21, Issue 8 (August 1982) pp. 1123-1129
Abstract

Three *in-situ* and five remote sensing techniques for measuring the height of the daytime convective boundary layer were compared. There was, as a rule, good agreement between the different systems when the capping inversion was steep and well ...

[\[Abstract\]](#) [\[PDF \(551 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ A Comparison of Anemometer- and Lidar-Sensed Wind Velocity Data
M. J. Post, R. L. Schwiesow, R. E. Cupp, D. A. Haugen, J. T. Newman
Journal of Applied Meteorology
Volume 17, Issue 8 (August 1978) pp. 1179-1181
Abstract

Comparisons between measurements of a wind component by a Doppler lidar and by a conventional anemometer are presented. The two measurement techniques provided thirteen 15 min data sets which agreed within 0.04 m s^{-1} on the average. The maximum ...

[\[Abstract\]](#) [\[PDF \(209 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Errors in Second Moments Estimated from Monostatic Doppler Sodar Winds. Part I: Theoretical Description
L. Kristensen, J. E. Gaynor
Journal of Atmospheric and Oceanic Technology
Volume 3, Issue 3 (September 1986) pp. 523-528
doi: 10.1175/1520-0426(1986)003<0523:EISMEF>2.0.CO;2
Abstract

We present a theoretical derivation for errors in calculated second moments arising from the temporal and spatial separation between individual wind measurements obtained from three-axis colocated monostatic Doppler sodar systems. The derived ...

[\[Abstract\]](#) [\[PDF \(441 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Mean Horizontal Wind in an Inversion-Capped Convective Boundary Layer
Claude Klapisz, Alain Weill
Journal of Applied Meteorology
Volume 21, Issue 5 (May 1982) pp. 648-655
Abstract

We have studied a set of detailed mean horizontal wind profiles obtained with a three-component Doppler sodar. For inversion-capped, convective boundary layer conditions, empirical expressions for the mean horizontal wind and the wind shear in ...

[\[Abstract\]](#) [\[PDF \(477 KB\)\]](#) [\[Add to Favorites\]](#)

- Comparison of a Doppler Sodar with Bivanes and Cup Anemometers
Robert J. Kurzeja
Journal of Atmospheric and Oceanic Technology
Volume 11, Issue 1 (February 1994) pp. 192-199
Abstract

A commercial Doppler sodar was operated near a 300-m tower instrumented with bivanes and cup anemometers. Sodar measurements of wind speed and direction and a turbulence variable (σ_w) were compared with tower measurements at 90, 180, and 300 m. A ...

[\[Abstract\]](#) [\[PDF \(540 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Accuracy of the Collocated Transfer Standard Method for Wind Instrument Auditing
Thomas J. Lockhart
Journal of Atmospheric and Oceanic Technology
Volume 6, Issue 4 (August 1989) pp. 715-723
Abstract

The application of collocated data collection for the purpose of estimating the accuracy of

an operating wind instrument requires some baseline demonstrating the best agreement which can be expected. A series of data were carefully taken in 1982 ...

[\[Abstract\]](#) [\[PDF \(580 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ The Effect of Line Averaging on Scalar Flux Measurements with a Sonic Anemometer near the Surface

Leif Kristensen, David R. Fitzjarrald

Journal of Atmospheric and Oceanic Technology

Volume 1, Issue 2 (June 1984) pp. 138-146

doi: 10.1175/1520-0426(1984)001<0138:TEOLAO>2.0.CO;2

Abstract

We present a theoretical analysis of the effect of line averaging by a sonic anemometer on scalar fluxes and an observational study of this phenomenon in the atmospheric surface layer. The theoretical analysis rests on an axisymmetric model for ...

[\[Abstract\]](#) [\[PDF \(586 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ The Joint Airport Weather Studies Project
John McCarthy, James W. Wilson, T. Theodore Fujita
Bulletin of the American Meteorological Society
Volume 63, Issue 1 (January 1982) pp. 15-15
Abstract

The Joint Airport Weather Studies (JAWS) Project will investigate the microburst event, having 2–10 km spatial and 2–10 min temporal scales, at Denver's Stapleton International Airport during the summer of 1982. JAWS applications and technology ...

[\[Abstract\]](#) [\[PDF \(584 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ On the Effect of Dissipation on Shear Instabilities in the Stable Atmospheric Boundary Layer
D. Fuà, F. Einaudi
Journal of the Atmospheric Sciences
Volume 41, Issue 5 (March 1984) pp. 888-900
Abstract

We are presenting the results of a stability analysis of a background wind shear in the presence of stable stratification and of height dependent coefficients of eddy viscosity and eddy thermal conduction. It is shown that the vertical gradients ...

[\[Abstract\]](#) [\[PDF \(566 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Space and Time Filtering of Remotely Sensed Velocity Turbulence
A. B. White, R. J. Latatits, R. S. Lawrence
Journal of Atmospheric and Oceanic Technology
Volume 16, Issue 12 (December 1999) pp. 1967-1972
Abstract

It is well known that the width of a clear-air Doppler radar spectrum can be used to estimate the small-scale variability of the wind. To do this accurately requires that all contributions to the spectral width be accounted for. Recently, an ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(108 KB\)\]](#) [\[Add to Favorites\]](#)

- Some Effects of the Yellowstone Fire Smoke Plume on Northeast Colorado at the End of Summer 1988
M. Segal, J. Weaver, J. F. W. Purdom
Monthly Weather Review
Volume 117, Issue 10 (October 1989) pp. 2278-2284
Abstract

Extensive fires in Yellowstone National Park, Wyoming, during the summer of 1988 resulted in considerable smoke transport to surrounding states. The present note provides an observational evaluation of the effects of this plume on (i) surface ...

[\[Abstract\]](#) [\[PDF \(874 KB\)\]](#) [\[Add to Favorites\]](#)

- Reynolds Stress Deflections of the Bivane Anemometer
G. Chimonas
Journal of Applied Meteorology
Volume 19, Issue 3 (March 1980) pp. 329-333
Abstract

We show that a bivane anemometer or other elevation angle sensing device records a nonzero mean angle when responding to cross-correlated fluctuations in a mean wind. Our analysis shows how this mean offset can be used to derive the wind-aligned ...

[\[Abstract\]](#) [\[PDF \(364 KB\)\]](#) [\[Add to Favorites\]](#)

- An Indirect Estimation of Convective Boundary Layer Structure for Use in Pollution Dispersion Models
James M. Wilczak, Mary Sue Phillips
Journal of Climate and Applied Meteorology
Volume 25, Issue 11 (November 1986) pp. 1609-1624
Abstract

Dispersion models of the convectively driven atmospheric boundary layer (ABL) often require as input meteorological parameters that are not routinely measured. These parameters usually include the surface fluxes of heat and momentum $\rho C_p w' \theta'$ and $\rho u' w'$, the ...

[\[Abstract\]](#) [\[PDF \(1034 KB\)\]](#) [\[Add to Favorites\]](#)

- Design and Development of a Radar Control Program for the NOAA/WPL Pulse-Doppler Radars
W. R. Moninger

Journal of Climate and Applied Meteorology
Volume 22, Issue 5 (May 1983) pp. 859-862
Abstract

Development of a computer program to control and acquire data with meteorological research radars is described. The performance goals for the program are enumerated, and the implementation techniques to achieve these goals are discussed. Possible ...

[\[Abstract\]](#) [\[PDF \(324 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Lidar Measurement of Turbulence Encountered by Horizontal-Axis Wind Turbines
R. M. Hardesty, B. F. Weber
Journal of Atmospheric and Oceanic Technology
Volume 4, Issue 1 (March 1987) pp. 191-203
doi: 10.1175/1520-0426(1987)004<0191:LMOTEB>2.0.CO;2
Abstract

We used a continuous-wave (CW) Doppler lidar to measure wind velocity turbulence from a moving frame of reference. By directing the lidar beam to trace the perimeters of vertical-plane disks about horizontal axes parallel to the mean wind ...

[\[Abstract\]](#) [\[PDF \(992 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Comparative Analysis of Low-Level Cold Fronts: Wavelet, Fourier, and Empirical Orthogonal Function Decompositions
Nimal Gamage, William Blumen
Monthly Weather Review
Volume 121, Issue 10 (October 1993) pp. 2867-2878
Abstract

Atmospheric cold fronts observed in the boundary layer represent relatively sharp transition zones between air masses of disparate physical characteristics. Further, wavelike features and/or eddy structures are often observed in conjunction with ...

[\[Abstract\]](#) [\[PDF \(1011 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Thermally Forced Surface Flow and Convergence Patterns over Northeast Colorado
Deborah J. Abbs, Roger A. Pielke
Monthly Weather Review
Volume 114, Issue 12 (December 1986) pp. 2281-2296
Abstract

Numerical model simulations have been performed with the Colorado State University mesoscale model to determine the regions of most likely occurrence of first cumulonimbus activity. It is shown that during the day, convergence along the eastern ...

[\[Abstract\]](#) [\[PDF \(1263 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Summer Surface Flow Characteristics over Northeast Colorado
James J. Toth, Richard H. Johnson
Monthly Weather Review
Volume 113, Issue 9 (September 1985) pp. 1458-1469
Abstract

Surface wind data from the program for Regional Observing and Forecasting Services (PROFS) have been analyzed to investigate the diurnal wind flow pattern over the broad drainage area of the South Platte River in northeast Colorado. A consistent ...

[\[Abstract\]](#) [\[PDF \(951 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ The Naval Research Laboratory's Air-Sea Interaction Blimp Experiment
Theodore V. Blanc, William J. Plant, William C. Keller
Bulletin of the American Meteorological Society
Volume 70, Issue 4 (April 1989) pp. 354-365
Abstract

The rationale is given for a unique experiment in which microwave scatterometer and surface flux measurements are to be made from a blimp to develop an improved scatterometer model function. A principal goal of the effort is to obtain a more ...

[\[Abstract\]](#) [\[PDF \(1068 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Dynamics and Energetics of Convective Plumes in the Atmospheric Surface Layer
Yahui Zhuang
Journal of the Atmospheric Sciences
Volume 52, Issue 10 (May 1995) pp. 1712-1722
Abstract

Budgets of horizontal and vertical momentum and of turbulent kinetic energy in vertical direction within updrafts of convective plumes are evaluated, using experimental observations of velocities and temperatures and the corresponding pressure ...

[\[Abstract\]](#) [\[PDF \(860 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Finestructure of Elevated Stable Layers Observed by Sounder and *In Situ* Tower Sensors
E. E. Gossard, J. E. Gaynor, R. J. Zamora, W. D. Neff
Journal of the Atmospheric Sciences
Volume 42, Issue 20 (October 1985) pp. 2156-2169
Abstract

A study of the finestructure within elevated stable atmospheric layers is described. The observational program consisted of measurements made with fast-response turbulence sensors on a carriage traversing a 300 m tower and comparison of the ...

[\[Abstract\]](#) [\[PDF \(1422 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Large-Scale Eddies in the Unstably Stratified Atmospheric Surface Layer. Part I: Velocity and Temperature Structure
J. M. Wilczak
Journal of the Atmospheric Sciences
Volume 41, Issue 24 (December 1984) pp. 3537-3550
Abstract

Ensemble vertical cross sections are derived for the velocity and temperature fields associated with large-scale eddy (LSE) temperature ramp structures in the turbulent, convective atmospheric surface layer. The turbulent fluxes of heat and ...

[\[Abstract\]](#) [\[PDF \(1147 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Structure of the Planetary Boundary Layer and Implications for its Modeling
John C. Wyngaard
Journal of Climate and Applied Meteorology
Volume 24, Issue 11 (November 1985) pp. 1131-1142
Abstract

Through the innovative use of laboratory experiments, numerical simulations, and direct measurements, researchers have greatly extended our knowledge of planetary boundary layer (PBL) structure over the last 15 years. This paper reviews some ...

[\[Abstract\]](#) [\[PDF \(957 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ On the Meteorological Conditions during Postprecipitation Periods: Implications to Pollutant Dispersion
G. Kallos, M. Segal
Journal of Applied Meteorology
Volume 30, Issue 3 (March 1991) pp. 297-311
doi: 10.1175/1520-0450(1991)030<0297:OTMCDP>2.0.CO;2
Abstract

The various processes within the atmospheric boundary layer (ABL) during precipitation events tend to thermally stabilize the ABL. Selected observations are presented in order to illustrate this thermal stabilization for convective and stratified ...

[\[Abstract\]](#) [\[PDF \(1141 KB\)\]](#) [\[Add to Favorites\]](#)

Impact of Clouds on the Shortwave Radiation Budget of the Surface-Atmosphere System for Snow-Covered Surfaces
Seth Nemesure, Robert D. Cess, Ellsworth G. Dutton, John J. Deluisi, Zhanqing Li, Henry G. Leighton
Journal of Climate
Volume 7, Issue 4 (April 1994) pp. 579-585
Abstract

Recent data from the Earth Radiation Budget Experiment (ERBE) have raised the question as to whether or not the addition of clouds to the atmospheric column can decrease the top-of-the-atmosphere (TOA) albedo over bright snow-covered surfaces. To ...

[\[Abstract\]](#) [\[PDF \(511 KB\)\]](#) [\[Add to Favorites\]](#)

- Wind Profiler and RASS Measurements Compared with Measurements from a 450-m-Tall Tower

Wayne M. Angevine, Peter S. Bakwin, Kenneth J. Davis
Journal of Atmospheric and Oceanic Technology
Volume 15, Issue 3 (June 1998) pp. 818-825
doi: 10.1175/1520-0426(1998)015<0818:WPARMC>2.0.CO;2
Abstract

A 915-MHz boundary layer wind profiler with radio acoustic sounding system (RASS) was sited 8 km from a very tall (450 m) television transmitting tower in north-central Wisconsin during the spring, summer, and autumn of 1995. The profiler ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(110 KB\)\]](#) [\[Add to Favorites\]](#)

- Atmospheric Gravity Waves and Aircraft Turbulence Encounters

A. J. Bedard Jr., F. Canavero, F. Einaudi
Journal of the Atmospheric Sciences
Volume 43, Issue 23 (December 1986) pp. 2838-2844
Abstract

We describe aircraft turbulence-atmospheric gravity wave events which occurred during a 2-day period over the Continental Divide. The waves are observed by two microbarograph networks on each side of the divide and last for several hours at a ...

[\[Abstract\]](#) [\[PDF \(515 KB\)\]](#) [\[Add to Favorites\]](#)

- Observations and Mixed-Layer Modeling of a Terrain-Induced Mesoscale Gyre: The Denver Cyclone

J. M. Wilczak, J. W. Glendening
Monthly Weather Review
Volume 116, Issue 12 (December 1988) pp. 2688-2711
Abstract

In northeastern Colorado a frequently observed feature of the surface wind field is a stationary, terrain-induced mesoscale gyre, which is often associated with the formation of severe weather. Because of the gyre/s proximity to the Denver ...

[\[Abstract\]](#) [\[PDF \(2270 KB\)\]](#) [\[Add to Favorites\]](#)

- Observations and Mixed-Layer Modeling of a Terrain-Induced Mesoscale Gyre: The Denver Cyclone

J. M. Wilczak, J. W. Glendening

Monthly Weather Review
Volume 116, Issue 8 (August 1988) pp. 1599-1622
Abstract

In northeastern Colorado a frequently observed feature of the surface wind field is a stationary, terrain-induced mesoscale gyre, which is often associated with the formation of severe weather. Because of the gyre's proximity to the Denver ...

[\[Abstract\]](#) [\[PDF \(2257 KB\)\]](#) [\[Add to Favorites\]](#)

- Surface Net Solar Radiation Estimated from Satellite Measurements: Comparisons with Tower Observations
Zhanqing Li, H. O. Leighton, Robert D. Cess
Journal of Climate
Volume 6, Issue 9 (September 1993) pp. 1764-1772
Abstract

A parameterization that relates the reflected solar flux at the top of the atmosphere to the net solar flux at the surface in terms of only the column water vapor amount and the solar zenith angle was tested against surface observations. Net ...

[\[Abstract\]](#) [\[PDF \(654 KB\)\]](#) [\[Add to Favorites\]](#)

- Annual Forcing of the Surface Radiation Balance Diurnal Cycle Measured from a High Tower near Boulder, Colorado
Ellsworth G. Dutton
Journal of Climate
Volume 3, Issue 12 (December 1990) pp. 1400-1408
Abstract

The radiation balance consisting of upward and downward components of solar and thermal infrared broadband irradiances is continuously measured from the top of a 300-m tower situated on the Colorado high plains. The data are representative of a ...

[\[Abstract\]](#) [\[PDF \(732 KB\)\]](#) [\[Add to Favorites\]](#)

- Improved Radio Acoustic Sounding Techniques
Wayne M. Angevine, W. L. Ecklund, D. A. Carter, K. S. Gage, K. P. Moran
Journal of Atmospheric and Oceanic Technology
Volume 11, Issue 1 (February 1994) pp. 42-49
Abstract

Improved radio acoustic sounding system (RASS) technology for use with radar wind profilers has been developed and applied to 915-MHz and 50-MHz profilers. The most important advance is the simultaneous measurement of the wind velocity to correct ...

[\[Abstract\]](#) [\[PDF \(582 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ On the Use of Slow Ascent Meter-Scale Sampling (SAMS) Radiosondes for Observing Overturning Events in the Free Atmosphere
Ben B. Balsley, Lakshmi Kantha, William Colgan
Journal of Atmospheric and Oceanic Technology
Volume 27, Issue 4 (April 2010) pp. 766-775
doi: 10.1175/2009JTECHA1310.1
Abstract

This note describes the development of a method for obtaining high vertical resolution (meter scale) measurements of basic meteorological quantities and turbulent overturns, using radiosondes with slow ascent rates. Although the method has some ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(963 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Eye of the Denver Cyclone
Edward J. Szoke
Monthly Weather Review
Volume 119, Issue 5 (May 1991) pp. 1283-1292
Abstract

Observation of an overcast of low cloudiness on a Denver Cyclone day revealed a circular area of clearing or “eye” at the approximate center of the mesoscale circulation. The eye passed close to an automated observing station, providing a time ...

[\[Abstract\]](#) [\[PDF \(1121 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Finescale Structure and Dynamics of an Atmospheric Temperature Interface
Vincent Hohreiter
Journal of the Atmospheric Sciences
Volume 65, Issue 5 (May 2008) pp. 1701-1710
Abstract

Near-ground observations of an atmospheric temperature interface in the stable nocturnal boundary layer are reported. The thermal effect of the interface passage was a 5-K decrease in temperature during a 5-min period in which changes in wind ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(724 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Turbulence Structure of the Convective Boundary Layer. Part I. Variability of Normalized Turbulence Statistics
George S. Young
Journal of the Atmospheric Sciences
Volume 45, Issue 4 (February 1988) pp. 719-726
Abstract

Profiles of turbulence statistics from aircraft observations of the Phoenix 78 convective boundary layer experiment are compared with those from previous observational and

modeling studies. The sources and degree of variability of the normalized ...

[\[Abstract\]](#) [\[PDF \(673 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ On the Kolmogorov Constants for the Temperature-Humidity Cospectrum and the Refractive Index Spectrum
Edgar L. Andreas
Journal of the Atmospheric Sciences
Volume 44, Issue 17 (September 1987) pp. 2399-2406
Abstract

Structure parameters for the temperature (C_θ^2) and humidity (C_q^2) spectra and for the temperature-humidity cospectrum ($C_{\theta q}$) that I have measured and additional values of $C_{\theta q}/(C_\theta^2 C_q^2)^{1/2}$ reported in the literature yield an estimate of the ratio of ...

[\[Abstract\]](#) [\[PDF \(571 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ VHF Doppler Radar Observations of Buoyancy Waves Associated with Thunderstorms
Daren Lu, T. E. VanZandt, W. L. Clark
Journal of the Atmospheric Sciences
Volume 41, Issue 2 (January 1984) pp. 272-282
Abstract

The Platteville VHF Doppler radar, located on the Colorado piedmont near Platteville, Colorado, continuously measured the vertical wind velocity during a 12-day period in late July and early August 1981. Measurements were made every 2.5 min on ...

[\[Abstract\]](#) [\[PDF \(794 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Lagrangian and Eulerian Time-Scale Relations in the Daytime Boundary Layer
Steven R. Hanna
Journal of Applied Meteorology
Volume 20, Issue 3 (March 1981) pp. 242-249
Abstract

Lagrangian (neutral balloon) and Eulerian (tower and aircraft) turbulence observations were made in the daytime mixed layer near Boulder, Colorado. Average sampling time was ~25 min. Average Lagrangian time scale is ~70 s and average ratio of ...

[\[Abstract\]](#) [\[PDF \(621 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Radio Acoustic Sounding System Observations of an Arctic Front
Paul J. Neiman, P. T. May, B. B. Stankov, M. A. Shapiro
Journal of Applied Meteorology
Volume 30, Issue 6 (June 1991) pp. 881-892
doi: 10.1175/1520-0450(1991)030<0881:RASSOO>2.0.CO;2
Abstract

A radio acoustic sounding system (RASS), coupled with the NOAA/Wave Propagation

Laboratory 915-MHz wind profiler, observed an arctic front and arctic air mass that passed over Denver, Colorado, between 1 and 5 February 1989. The RASS temperature ...

[\[Abstract\]](#) [\[PDF \(1025 KB\)\]](#) [\[Add to Favorites\]](#)

- Are Radiosonde Time Scales Appropriate to Characterize Boundary Layer Wind Profiles?
Marc B. Parlange, W. Brutsaert
Journal of Applied Meteorology
Volume 29, Issue 3 (March 1990) pp. 249-255
doi: 10.1175/1520-0450(1990)029<0249:ARTSAT>2.0.CO;2
Abstract

One approach under investigation for obtaining regional-scale surface fluxes of water vapor, heat, and momentum from complex terrain involves the applicability of flux-profile relationships in the atmospheric boundary layer (ABL). Mean humidity, ...

[\[Abstract\]](#) [\[PDF \(518 KB\)\]](#) [\[Add to Favorites\]](#)

- Contamination of Wind Profiler Data by Migrating Birds: Characteristics of Corrupted Data and Potential Solutions
J. M. Wilczak, R. G. Strauch, F. M. Ralph, B. L. Weber, D. A. Merritt, J. R. Jordan, D. E. Wolfe, L. K. Lewis, D. B. Wuertz, J. E. Gaynor, S. A. McLaughlin, R. R. Rogers, A. C. Riddle, T. S. Dye
Journal of Atmospheric and Oceanic Technology
Volume 12, Issue 3 (June 1995) pp. 449-467
Abstract

Winds measured with 915- and 404-MHz wind profilers are frequently found to have nonrandom errors as large as 15 m s^{-1} when compared to simultaneously measured rawinsonde winds. Detailed studies of these errors which occur only at night below ...

[\[Abstract\]](#) [\[PDF \(2302 KB\)\]](#) [\[Add to Favorites\]](#)

- How Long Is Long Enough When Measuring Fluxes and Other Turbulence Statistics?
D. H. Lenschow, J. Mann, L. Kristensen
Journal of Atmospheric and Oceanic Technology
Volume 11, Issue 3 (June 1994) pp. 661-673
Abstract

It is determined how long a time series must be to estimate covariances and moments up to fourth order with a specified statistical significance. For a given averaging time T there is a systematic difference between the true flux or moment and ...

[\[Abstract\]](#) [\[PDF \(987 KB\)\]](#) [\[Add to Favorites\]](#)

- The Mountain-Plains Circulation East of a 2-km-High North-South Barrier
Paul G. Wolyn, Thomas B. Mckee
Monthly Weather Review
Volume 122, Issue 7 (July 1994) pp. 1490-1508

Abstract

The daytime mountain-plains circulation east of a 2-km-high and 60-km-wide barrier is examined for conditions of clear skies, light ambient winds with a westerly component around 5 m s^{-1} , and little spatial and temporal change to the synoptic...

[\[Abstract\]](#) [\[PDF \(1623 KB\)\]](#) [\[Add to Favorites\]](#)

Similarity Equations for Wind and Temperature Profiles in the Radix Layer, at the Bottom of the Convective Boundary Layer

Edi Santoso, Roland Stull

Journal of the Atmospheric Sciences

Volume 58, Issue 11 (June 2001) pp. 1446-1464

Abstract

In the middle of the convective boundary layer, also known as the mixed layer, is a relatively thick region where wind speed and potential temperature are nearly uniform with height. Below this uniform layer (UL), wind speed decreases to zero at ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(246 KB\)\]](#) [\[Add to Favorites\]](#)

- An Observational and Numerical Study of a Sheared, Convective Boundary Layer. Part I: Phoenix II Observations, Statistical Description, and Visualization

Jeanne M. Schneider, Douglas K. Lilly

Journal of the Atmospheric Sciences

Volume 56, Issue 17 (September 1999) pp. 3059-3078

Abstract

Four-dimensional velocity fields derived from dual Doppler radar observations are the basis of a description and statistical analysis of a convective, sheared planetary boundary layer during an afternoon over the High Plains of eastern Colorado. ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(448 KB\)\]](#) [\[Add to Favorites\]](#)

- Large-Scale Eddies in the Unstably Stratified Atmospheric Surface Layer. Part II: Turbulent Pressure Fluctuations and the Budgets of Heat Flux, Stress and Turbulent Kinetic Energy

J. M. Wilczak, Joost A. Businger

Journal of the Atmospheric Sciences

Volume 41, Issue 24 (December 1984) pp. 3551-3567

Abstract

A method is developed for retrieving turbulent pressure fluctuations from tower measurements of velocity and temperature, through use of the equations of motion. This method is applied to a series of large-scale eddies which are defined by their ...

[\[Abstract\]](#) [\[PDF \(1327 KB\)\]](#) [\[Add to Favorites\]](#)

- Probabilistic Characterization of Atmospheric Transport and Diffusion
John S. Irwin, William B. Petersen, Steven C. Howard
Journal of Applied Meteorology and Climatology
Volume 46, Issue 7 (July 2007) pp. 980-993
doi: 10.1175/JAM2515.1
Abstract

The observed scatter of observations about air quality model predictions stems from a combination of naturally occurring stochastic variations that are impossible for any model to simulate explicitly and variations arising from limitations in ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(1149 KB\)\]](#) [\[Add to Favorites\]](#)

- Cold Air Damming by the Front Range of the Colorado Rockies and its Relationship to Locally Heavy Snows
Lawrence Dunn
Weather and Forecasting
Volume 2, Issue 3 (September 1987) pp. 177-189
Abstract

Heavy snowstorms occur regularly along Colorado's Front Range and cause significant economic and human consequences for the urban corridor from Denver to Fort Collins. This paper examines one type of winter storm that displays great variability ...

[\[Abstract\]](#) [\[PDF \(1116 KB\)\]](#) [\[Add to Favorites\]](#)

- An Extended Comparison between LOWTRAN7 Computed and Observed Broadband Thermal Irradiances: Global Extreme and Intermediate Surface Conditions
Ellsworth G. Dutton
Journal of Atmospheric and Oceanic Technology
Volume 10, Issue 3 (June 1993) pp. 326-336
Abstract

Differences between observed and LOWTRAN7-computed downward longwave irradiances were examined at each of four globally diverse locations for an entire year at each site. The final results are restricted to times determined to be completely or ...

[\[Abstract\]](#) [\[PDF \(926 KB\)\]](#) [\[Add to Favorites\]](#)

- Intercomparison of Wind Measurements from Two Acoustic Doppler Sodars, a Laser Doppler Lidar, and In Situ Sensors
Prasan Chintawongvanich, Robert Olsen, Christopher A. Biltoft
Journal of Atmospheric and Oceanic Technology
Volume 6, Issue 5 (October 1989) pp. 785-797
Abstract

Intercomparative measurements of wind speed, wind direction, wind direction standard deviation, and vertical wind standard deviation from two acoustic Doppler sodars and a

laser Doppler lidar are studied, using the BAO tower to provide reference ...

[\[Abstract\]](#) [\[PDF \(884 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Comparison of Wind Monitoring Systems. Part II: Doppler. Sodars
P. L. Finkelstein, J. C. Kaimal, J. E. Gaynor, M. E. Graves, T. J. Lockhart
Journal of Atmospheric and Oceanic Technology
Volume 3, Issue 4 (December 1986) pp. 594-604
doi: 10.1175/1520-0426(1986)003<0594:COWMSP>2.0.CO;2
Abstract

Measurements of wind speed, wind direction, and the vertical component of turbulence, from four different commercially available Doppler sodars, are compared with similar measurements from in situ sensors on a 300 m instrumented tower. Results ...

[\[Abstract\]](#) [\[PDF \(782 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Uncorrelated Noise in Turbulence Measurements
Donald H. Lenschow, Leif Kristensen
Journal of Atmospheric and Oceanic Technology
Volume 2, Issue 1 (March 1985) pp. 68-81
doi: 10.1175/1520-0426(1985)002<0068:UNITM>2.0.CO;2
Abstract

We show that the error variance contributed by random uncorrelated measurement noise can be merged with the error variance contributed by real variations in the atmosphere to obtain a single expression for the total error variance when the ...

[\[Abstract\]](#) [\[PDF \(948 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Measurements of Boundary Layer Profiles with In Situ Sensors and Doppler Lidar
Rod Frehlich, Yannick Meillier, Michael L. Jensen
Journal of Atmospheric and Oceanic Technology
Volume 25, Issue 8 (August 2008) pp. 1328-1340
Abstract

A new in situ measurement system and lidar processing algorithms were developed for improved measurements of boundary layer profiles. The first comparisons of simultaneous Doppler lidar-derived profiles of the key turbulence statistics of the two ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(1113 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ A Comparative Study of Rainfall Retrievals Based on Specific Differential Phase Shifts at X- and S-Band Radar Frequencies
Sergey Y. Matrosov, Robert Cifelli, Patrick C. Kennedy, Steven W. Nesbitt, Steven A. Rutledge, V. N. Bringi, Brooks E. Martner
Journal of Atmospheric and Oceanic Technology
Volume 23, Issue 7 (July 2006) pp. 952-963
Abstract

A comparative study of the use of X- and S-band polarimetric radars for rainfall parameter retrievals is presented. The main advantage of X-band polarimetric measurements is the availability of reliable specific differential phase shift estimates,...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(1384 KB\)\]](#) [\[Add to Favorites\]](#)

- Experimental Validation of Wind Profiling Performed by the Airborne 10- μ m Heterodyne Doppler Lidar WIND

Oliver Reitebuch, Christian Werner, Ines Leike, Patricia Delville, Pierre H. Flamant, Alexander Cress, Dirk Engelbart

Journal of Atmospheric and Oceanic Technology

Volume 18, Issue 8 (August 2001) pp. 1331-1344

doi: 10.1175/1520-0426(2001)018<1331:EVOWPP>2.0.CO;2

Abstract

The airborne Wind Infrared Doppler Lidar (WIND) has been developed through French–German cooperation. The system is based on a pulsed 10.6- μ m laser transmitter, a heterodyne receiver, and a conical scanning device. To the authors' knowledge, it ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(839 KB\)\]](#) [\[Add to Favorites\]](#)

- Measurement of Broadband Diffuse Solar Irradiance Using Current Commercial Instrumentation with a Correction for Thermal Offset Errors

Ellsworth G. Dutton, Joseph J. Michalsky, Thomas Stoffel, Bruce W. Forgan, John Hickey, Donald W. Nelson, Timothy L. Alberta, Ibrahim Reda

Journal of Atmospheric and Oceanic Technology

Volume 18, Issue 3 (March 2001) pp. 297-314

doi: 10.1175/1520-0426(2001)018<0297:MOBDSI>2.0.CO;2

Abstract

Diffuse-sky solar irradiance is an important quantity for radiation budget research, particularly as it relates to climate. Diffuse irradiance is one component of the total downwelling solar irradiance and contains information on the amount of ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(249 KB\)\]](#) [\[Add to Favorites\]](#)

- Optimal Measurement of Surface Shortwave Irradiance Using Current Instrumentation

J. Michalsky, E. Dutton, M. Rubes, D. Nelson, T. Stoffel, M. Wesley, M. Splitt, J. DeLuisi

Journal of Atmospheric and Oceanic Technology

Volume 16, Issue 1 (January 1999) pp. 55-69

doi: 10.1175/1520-0426(1999)016<0055:OMOSI>2.0.CO;2

Abstract

Although most measurements of total downwelling shortwave irradiance are made with pyranometers, the World Climate Research Program's Baseline Surface Radiation Network has recommended the use of the summation of shortwave components in which the ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(240 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Observations and Numerical Modeling of an Elevated Mixed Layer
Raymond W. Arritt, James M. Wilczak, George S. Young
Monthly Weather Review
Volume 120, Issue 12 (December 1992) pp. 2869-2880
Abstract

Observations and a numerical model have been used to investigate the structure of an elevated mixed layer (EML) that formed in the lee of the Rocky Mountains over eastern Colorado. The EML formed as a dry convective boundary layer over the higher ...

[\[Abstract\]](#) [\[PDF \(1019 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Analysis of a Surface Front during the Early Summer Rainy Season over Taiwan
Yi-Leng Chen, Yu-Xia Zhang, Norman B-F. Hui
Monthly Weather Review
Volume 117, Issue 5 (May 1989) pp. 909-931
Abstract

A case study of a relatively dry front during TAMEX IOP-4 is presented. At 0000 UTC 27 May, the broad cloud band extended from the China plain and southern Japan to east of 150°E, along and north of the surface front. This front possessed ...

[\[Abstract\]](#) [\[PDF \(1986 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Multiscale Analysis of a Meso- β Frontal Passage in the Complex Terrain of the Colorado Front Range
Lisa S. Darby, William D. Neff, Robert M. Banta
Monthly Weather Review
Volume 127, Issue 9 (September 1999) pp. 2062-2082
Abstract

Data from a mesoscale observing network are used to describe the evolution of a complex boundary between a dry air mass near the foothills of the Rocky Mountains and a shallow moist air mass over the eastern plains. Synoptic-scale analyses ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(1075 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Autonomous Aerosondes for Economical Atmospheric Soundings Anywhere on the Globe
Greg J. Holland, Tad McGeer, Harold Youngren
Bulletin of the American Meteorological Society
Volume 73, Issue 12 (December 1992) pp. 1987-1998
Abstract

Considerable interest in the use of autonomous aircraft for atmospheric measurements in remote and hazardous areas world-wide has arisen over recent years. Their application in tropical cyclone reconnaissance is under study by the World ...

[\[Abstract\]](#) [\[PDF \(1297 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ A Parameterization for the Shortwave Transmissivity of Stratiform Water Clouds Based on Empirical Data and Radiative Transfer Theory
V. E. Derr, R. S. Stone, H. P. Hanson, L. S. Fedor
Journal of the Atmospheric Sciences
Volume 47, Issue 23 (December 1990) pp. 2774-2783
Abstract

Surface measurements of solar flux and total integrated liquid-water content, radiosonde data, and infrared satellite images are analyzed in conjunction with radiative transfer calculations to derive an empirical parameterization for the ...

[\[Abstract\]](#) [\[PDF \(831 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Turbulence Structure of the Convective Boundary Layer. Part II. Phoenix 78 Aircraft Observations of Thermals and Their Environment
George S. Young
Journal of the Atmospheric Sciences
Volume 45, Issue 4 (February 1988) pp. 727-735
Abstract

A conditional sampling technique based upon the mixed layer spectra of vertical velocity and temperature is developed. This technique is used to analyze the turbulence data obtained by aircraft during the Phoenix 78 convective boundary layer ...

[\[Abstract\]](#) [\[PDF \(732 KB\)\]](#) [\[Add to Favorites\]](#)

Large-Eddy Simulation of a Stratus-Topped Boundary Layer. Part II: Implications for Mixed-Layer Modeling
Chin-Hoh Moeng
Journal of the Atmospheric Sciences
Volume 44, Issue 12 (June 1987) pp. 1605-1614
Abstract

Two sets of large-eddy simulation data were used to study some of the assumptions about the cloud-topped boundary layer (CTBL) structure which are used in mixed-layer models. The roles of buoyant production and cloud-top radiative cooling in ...

[\[Abstract\]](#) [\[PDF \(835 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Synoptic Observations and Theory of Orographically Disturbed Wind and Pressure
Ronald B. Smith
Journal of the Atmospheric Sciences
Volume 39, Issue 1 (January 1982) pp. 60-70
Abstract

A survey of existing synoptic data from the vicinity of major mountain ranges indicates two common aspects of orographic influence on the atmosphere—a hydrostatically generated pressure difference across the mountains and a leftward (in the ...

[\[Abstract\]](#) [\[PDF \(805 KB\)\]](#) [\[Add to Favorites\]](#)

- The Use of Ground-Based Doppler Radars to Measure Gradients, Fluxes and Structure Parameters in Elevated Layers

E. E. Gossard, R. B. Chadwick, W. D. Neff, K. P. Moran

Journal of Applied Meteorology

Volume 21, Issue 2 (February 1982) pp. 211-226

Abstract

The use of ground-based clear-air Doppler radars to observe the structure of elevated atmospheric layers and associated flux quantities is described. Case studies in which radar and balloon data were available are analyzed. Doppler second-moment (...

[\[Abstract\]](#) [\[PDF \(1140 KB\)\]](#) [\[Add to Favorites\]](#)

- Lidar Measurements of Wind in the Planetary Boundary Layer: The Method, Accuracy and Results from Joint Measurements with Radiosonde and Kyttoon

William P. Hooper, Edwin W. Eloranta

Journal of Climate and Applied Meteorology

Volume 25, Issue 7 (July 1986) pp. 990-1001

Abstract

During the Central Illinois Rainfall Chemistry Experiment (CIRCE), the University of Wisconsin lidar measured wind and turbulence profiles through the planetary boundary layer for a 32-h period in conjunction with surface observations, radiosonde ...

[\[Abstract\]](#) [\[PDF \(988 KB\)\]](#) [\[Add to Favorites\]](#)

- Laboratory Experiments on Diffusion: The Use of Convective Mixed-Layer Scaling

J. W. Deardorff

Journal of Climate and Applied Meteorology

Volume 24, Issue 11 (November 1985) pp. 1143-1151

Abstract

A review is presented on laboratory modeling of diffusion downwind of a continuous point source within a boundary layer of well defined height with turbulence driven by buoyant convection. Results of using mixed-layer scaling are summarized and ...

[\[Abstract\]](#) [\[PDF \(744 KB\)\]](#) [\[Add to Favorites\]](#)

- Meteorological Tracer Techniques for Parameterizing Atmospheric Dispersion

Warren B. Johnson

Journal of Climate and Applied Meteorology

Volume 22, Issue 5 (May 1983) pp. 931-946

Abstract

Although tracer materials have been used in atmospheric dispersion studies for decades, basic information about meteorological tracer techniques is scattered among a number of different sources. This paper attempts to pull together this ...

[\[Abstract\]](#) [\[PDF \(1339 KB\)\]](#) [\[Add to Favorites\]](#)

- Modeling and Parameterization of Near-Source Diffusion in Weak Winds

S. Pal Arya

Journal of Applied Meteorology

Volume 34, Issue 5 (May 1995) pp. 1112-1122

doi: 10.1175/1520-0450(1995)034<1112:MAPONS>2.0.CO;2

Abstract

A critical assessment is made of several different approaches that can be used for modeling near-source diffusion in weak winds, including the calm condition. For the convective boundary layer, the statistical theory approach is used in ...

[\[Abstract\]](#) [\[PDF \(857 KB\)\]](#) [\[Add to Favorites\]](#)

- A Method for Determining Cirrus Cloud Particle Sizes Using Lidar and Radar Backscatter Technique

Janet M. Intrieri, Graeme L. Stephens, Wynn L. Eberhard, Taneil Uttal

Journal of Applied Meteorology

Volume 32, Issue 6 (June 1993) pp. 1074-1082

doi: 10.1175/1520-0450(1993)032<1074:AMFDCC>2.0.CO;2

Abstract

A method to determine cirrus cloud effective radii remotely using lidar and radar backscatter data is presented. The difference in backscattered returns from instruments widely separated in wavelength holds information on the characteristic sizes ...

[\[Abstract\]](#) [\[PDF \(787 KB\)\]](#) [\[Add to Favorites\]](#)

- Morning Temporal Variations of Shelter-Level Specific Humidity

M. Segal, G. Kallos, J. Brown, M. Mandel

Journal of Applied Meteorology

Volume 31, Issue 1 (January 1992) pp. 74-85

doi: 10.1175/1520-0450(1992)031<0074:MTVOSL>2.0.CO;2

Abstract

The temporal variation of specific humidity during morning hours was evaluated by analytic and numerical model scaling as well as by observational means. The scaling quantified (i) the gradual increase in the shelter increase humidity as the ...

[\[Abstract\]](#) [\[PDF \(839 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Mass and Momentum Balance in the Brush Creek Drainage Flow Determined from Single-Profile Data
Ronald J. Dobosy, K. Shankar Rao, John W. Przybylowicz, Richard M. Eckman, Rayford P. Hosker Jr.
Journal of Applied Meteorology
Volume 28, Issue 6 (June 1989) pp. 467-476
doi: 10.1175/1520-0450(1989)028<0467:MAMBIT>2.0.CO;2
Abstract

Fluxes and flux-divergences of mass and momentum in Brush Creek Valley, computed from measurements taken by Tethersondes and Doppler sodars in the 1984 ASCOT experiment, are presented. Estimates of mass influx from open sidewalls in Brush Creek, ...

[\[Abstract\]](#) [\[PDF \(784 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Meteorological Tower, Microbarograph Array, and Sodar Observations of Solitary-like Waves in the Nocturnal Boundary Layer
T. K. Cheung, C. G. Little
Journal of the Atmospheric Sciences
Volume 47, Issue 21 (November 1990) pp. 2516-2536
Abstract

Five short-duration disturbances of the stable nocturnal boundary layer, ranging in depth from about 15 m to over 500 m, were observed using a 300 m meteorological tower, 2 sodars, and a 4-station microbarograph array. Four of the events showed ...

[\[Abstract\]](#) [\[PDF \(1906 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Spectral Measurements in a Disturbed Boundary Layer over Snow
Edgar L. Andreas
Journal of the Atmospheric Sciences
Volume 44, Issue 15 (August 1987) pp. 1912-1939
Abstract

I have measured time series of the turbulent fluctuations in longitudinal (u) and vertical (w) velocity and in temperature (t) and humidity (q) with fast-responding sensors in the near-neutrally stable surface layer over a snow-covered field. The ...

[\[Abstract\]](#) [\[PDF \(1893 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Updating Applied Diffusion Models
J. C. Weil
Journal of Climate and Applied Meteorology
Volume 24, Issue 11 (November 1985) pp. 1111-1130
Abstract

Most diffusion models currently used in air quality applications are substantially out of date with understanding of turbulence and diffusion in the planetary boundary layer. Under a

Cooperative Agreement with the Environmental Protection Agency, ...

[\[Abstract\]](#) [\[PDF \(2033 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Lidar Sensing of Plume Dispersion: Analysis Methods and Product Quality for Light-Scattering Tracer Particles

W. L. Eberhard, G. T. McNice, S. W. Troxel

Journal of Atmospheric and Oceanic Technology

Volume 4, Issue 4 (December 1987) pp. 674-689

doi: 10.1175/1520-0426(1987)004<0674:LSOPDA>2.0.CO;2

Abstract

Analysis procedures are described for retrieving accurate plume information from lidar data on light-scattering particles during atmospheric dispersion experiments. Interactive computer graphics aided in the solution of the lidar equation for ...

[\[Abstract\]](#) [\[PDF \(1482 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Measuring High-Frequency Humidity, Temperature and Radio Refractive Index in the Surface Layer

J. T. Priestley, R. J. Hill

Journal of Atmospheric and Oceanic Technology

Volume 2, Issue 2 (June 1985) pp. 233-251

doi: 10.1175/1520-0426(1985)002<0233:MHFHTA>2.0.CO;2

Abstract

Three different instrument systems are compared in their ability to either directly or indirectly measure humidity, temperature, and refractive-index fluctuations. Each system consists of a basic instrument—a Lyman- α hygrometer, an infrared ...

[\[Abstract\]](#) [\[PDF \(1388 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Observations of Height-dependent Pressure-Perturbation Structure of a Strong Mesoscale Gravity Wave

David O'C. Starr, C. Laurence Korb, Geary K. Schwemmer, Chi Y. Weng

Monthly Weather Review

Volume 120, Issue 12 (December 1992) pp. 2808-2820

Abstract

Airborne observations using a downward-looking, dual-frequency, near-infrared, differential absorption lidar (DIAL) system provide the first measurements of the height-dependent pressure-perturbation field associated with a strong mesoscale ...

[\[Abstract\]](#) [\[PDF \(1402 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Case Study of an Orographically Induced Mesoscale Vortex (Denver Cyclone)

J. M. Wilczak, T. W. Christian

Monthly Weather Review

Volume 118, Issue 5 (May 1990) pp. 1082-1102

Abstract

Observations taken during the Convection Initiation and Downburst Experiment (CINDE) are used to describe the formation and structure of an orographically induced mesoscale vortex that frequently occurs in northeastern Colorado. This vortex, ...

[\[Abstract\]](#) [\[PDF \(2067 KB\)\]](#) [\[Add to Favorites\]](#)

- Gust Front Characteristics and the Kinematics Associated with Interacting Thunderstorm Outflows

William P. Mahoney III

Monthly Weather Review

Volume 116, Issue 7 (July 1988) pp. 1474-1492

Abstract

The morphology, kinematic and thermodynamic characteristics of 30 gust fronts were examined with single and dual-Doppler radar and surface mesonet data collected in eastern Colorado during the summers of 1982 and 1984.

The majority of gust fronts ...

[\[Abstract\]](#) [\[PDF \(1358 KB\)\]](#) [\[Add to Favorites\]](#)

- A Review of Cold Fronts with Prefrontal Troughs and Wind Shifts

David M. Schultz

Monthly Weather Review

Volume 133, Issue 8 (August 2005) pp. 2449-2472

Abstract

The conceptual model of a classical surface-based cold front consists of a sharp temperature decrease coincident with a pressure trough and a distinct wind shift at the surface. Many cold fronts, however, do not conform to this model—time series ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(1506 KB\)\]](#) [\[Add to Favorites\]](#)

- The Interaction of Katabatic Flow and Mountain Waves. Part II: Case Study Analysis and Conceptual Model

Gregory S. Poulos, James E. Bossert, Thomas B. McKee, Roger A. Pielke Sr.

Journal of the Atmospheric Sciences

Volume 64, Issue 6 (June 2007) pp. 1857-1879

Abstract

Via numerical analysis of detailed simulations of an early September 1993 case night, the authors develop a conceptual model of the interaction of katabatic flow in the nocturnal boundary layer with mountain waves (MKI). A companion paper (Part I)...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(3365 KB\)\]](#) [\[Add to Favorites\]](#)

A Climatological Study of Internal Gravity Waves in the Atmospheric Boundary Layer
Overlying the Brunt Ice Shelf, Antarctica

J. M. Rees, J. C. W. Denholm-Price, J. C. King, P. S. Anderson

Journal of the Atmospheric Sciences

Volume 57, Issue 4 (February 2000) pp. 511-526

doi: 10.1175/1520-0469(2000)057<0511:ACSOIG>2.0.CO;2

Abstract

Internal gravity waves are frequently observed in stably stratified regions of the atmospheric boundary layer. In order to determine the statistical influence of such waves on the dynamics of the boundary layer it is necessary to compile ...

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF \(589 KB\)\]](#) [\[Add to Favorites\]](#)

- Dynamics and Fine Structure of a Microburst
David B. Parsons, Robert A. Kropfli
Journal of the Atmospheric Sciences
Volume 47, Issue 13 (July 1990) pp. 1674-1692
Abstract

Details of the structure of a moderate reflectivity microburst were provided by dual-Doppler radar measurements during the Phoenix II convective boundary layer experiment. The dated allowed high resolution of the descending microburst in both ...

[\[Abstract\]](#) [\[PDF \(1720 KB\)\]](#) [\[Add to Favorites\]](#)

- Kinetic Energy Transfer between Internal Gravity Waves and Turbulence
J. J. Finnigan
Journal of the Atmospheric Sciences
Volume 45, Issue 3 (February 1988) pp. 486-505
Abstract

We describe a reliable method for distinguishing the mean, wave and turbulence fields when internal waves with changing amplitude perturb the turbulent boundary layer. By integrating the component wave and turbulence kinetic energy budgets ...

[\[Abstract\]](#) [\[PDF \(1511 KB\)\]](#) [\[Add to Favorites\]](#)

- Dynamics of a Thunderstorm Outflow
Cynthia K. Mueller, Richard E. Carbone
Journal of the Atmospheric Sciences
Volume 44, Issue 15 (August 1987) pp. 1879-1898
Abstract

The kinematic and thermodynamic structures of a thunderstorm outflow are examined by means of dual Doppler radar analysis, mesonet, lower, and sounding data. The data were collected in the Denver, Colorado area during June 1984.

The dual-Doppler ...

[\[Abstract\]](#) [\[PDF \(1687 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Dissipative Waves Excited by Gravity-Wave Encounters with the Stably Stratified Planetary Boundary Layer
William H. Hooke, R. Michael Jones
Journal of the Atmospheric Sciences
Volume 43, Issue 19 (October 1986) pp. 2048-2060
Abstract

We suggest that the strata of strong echo returns frequently revealed by remote-sensor records of the stably stratified planetary bound layer (PBL) represent the wavefronts of dissipative waves (viscous and thermal-conduction waves) excited by ...

[\[Abstract\]](#) [\[PDF \(1311 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Thermally Indirect Motions in the Convective Atmospheric Boundary Layer
J. M. Wilczak, Joost A. Businger
Journal of the Atmospheric Sciences
Volume 40, Issue 2 (February 1983) pp. 343-358
Abstract

The energetics of the dry convective boundary layer is studied by partitioning the turbulent heat flux into thermally indirect ($w'\theta' < 0$) and thermally direct ($w'\theta' > 0$) components as a function of z/Z_i . It is found that except for the inversion ...

[\[Abstract\]](#) [\[PDF \(1028 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ Radiative Cooling Effects within and above the Nocturnal Boundary Layer
J. R. Garratt, R. A. Brost
Journal of the Atmospheric Sciences
Volume 38, Issue 12 (December 1981) pp. 2730-2746
Abstract

For representative tropospheric profiles of water vapor, CO₂ and temperature we have calculated *in situ* longwave radiative flux divergence for use in a simplified second-order closure model of nocturnal boundary-layer evolution. The time ...

[\[Abstract\]](#) [\[PDF \(1201 KB\)\]](#) [\[Add to Favorites\]](#)

- ❑ An Observational and Prognostic Numerical Investigation of Complex Terrain Dispersion
Gregory S. Poulos, James E. Bossert
Journal of Applied Meteorology
Volume 34, Issue 3 (March 1995) pp. 650-669
doi: 10.1175/1520-0450(1995)034<0650:AOAPNI>2.0.CO;2
Abstract

The Atmospheric Studies in Complex Terrain Program conducted a field experiment at the

interface of the Rocky Mountains and the Great Plains in the winter of 1991. Extensive meteorological observations were taken in northeastern Colorado near ...

[\[Abstract\]](#) [\[PDF \(2091 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Observation of Atmospheric Fronts Using Raman Lidar Moisture Measurements
S. H. Melfi, D. Whiteman, R. Ferrare
Journal of Applied Meteorology
Volume 28, Issue 9 (September 1989) pp. 789-806
doi: 10.1175/1520-0450(1989)028<0789:OOAFUR>2.0.CO;2
Abstract

This paper presents the results of a field program using a ground-based Raman lidar system to observe changes in moisture profiles as a cold and a warm front passed over the NASA/Goddard Space Flight Center in Greenbelt, Maryland. The lidar ...

[\[Abstract\]](#) [\[PDF \(1627 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ Observations of a Colorado Tornado. Part I: Mesoscale Environment and Tornadogenesis
J. M. Wilczak, D. E. Wolfe, R. J. Zamora, B. Stankov, T. W. Christian
Monthly Weather Review
Volume 120, Issue 4 (April 1992) pp. 497-521
Abstract

On 2 July 1987 a nonmesocyclone tornado was observed in northeastern Colorado during the Convection Initiation and Downburst Experiment (CINDE). This tornado, reaching FI-F2 intensity, developed under a rapidly growing convective cell, without a ...

[\[Abstract\]](#) [\[PDF \(2481 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ A Study of the Convective Boundary-Layer Dynamics Using Single Doppler Radar Measurements
Mei Xu, Tzvi Gal-Chen
Journal of the Atmospheric Sciences
Volume 50, Issue 21 (November 1993) pp. 3641-3662
Abstract

The kinematic and dynamical properties of the convective planetary boundary layer (CBL) with shear are studied using single Doppler radar measurements. The data were collected using single K-band (0.87 cm) Doppler radar operated by the National ...

[\[Abstract\]](#) [\[PDF \(1737 KB\)\]](#) [\[Add to Favorites\]](#)

- ☐ The Interaction between an Internal Gravity Wave and Turbulence in the Stably-Stratified Nocturnal Boundary Layer
J. J. Finnigan, F. Einaudi, D. Fua
Journal of the Atmospheric Sciences
Volume 41, Issue 16 (August 1984) pp. 2409-2436
Abstract

Observations have been made of a stably-stratified nighttime boundary layer perturbed by Kelvin-Helmholtz internal waves with critical levels around 600 m. Significant turbulence intensities were measured although the time-mean gradient ...

[\[Abstract\]](#) [\[PDF \(2176 KB\)\]](#) [\[Add to Favorites\]](#)

- Analytical Parameterizations of Diffusion: The Convective Boundary Layer
Gary A. Briggs
Journal of Climate and Applied Meteorology
Volume 24, Issue 11 (November 1985) pp. 1167-1186
Abstract

A brief review is made of data bases which have been used for developing diffusion parameterizations for the convective boundary layer (CBL). A variety of parameterizations for lateral and vertical dispersion, σ_y and σ_z , are surveyed; some of ...

[\[Abstract\]](#) [\[PDF \(1734 KB\)\]](#) [\[Add to Favorites\]](#)

- Quantifying Cloud-Induced Shortwave Absorption: An Examination of Uncertainties and of Recent Arguments for Large Excess Absorption
D. G. Imre, E. H. Abramson, P. H. Daum
Journal of Applied Meteorology
Volume 35, Issue 11 (November 1996) pp. 1991-2010
doi: 10.1175/1520-0450(1996)035<1991:QCISAA>2.0.CO;2
Abstract

The quantification of cloud-induced shortwave atmospheric absorption is a painstaking task and often the subject of contention. Several analytical methods previously used for this purpose are examined in detail applying each method to a set of ...

[\[Abstract\]](#) [\[PDF \(1704 KB\)\]](#) [\[Add to Favorites\]](#)

- Linking Boundary-Layer Circulations and Surface Processes during FIFE 89. Part I: Observational Analysis
Eric A. Smith, Mickey M-K. Wai, Harry J. Cooper, Michael T. Rubes, Ann Hsu
Journal of the Atmospheric Sciences
Volume 51, Issue 11 (June 1994) pp. 1497-1529
Abstract

Surface, aircraft, and satellite observations are analyzed for the 21-day 1989 intensive field campaign of the First ISLSCP Field Experiment (FIFE) to determine the effect of precipitation, vegetation, and soil moisture distributions on the ...

[\[Abstract\]](#) [\[PDF \(2768 KB\)\]](#) [\[Add to Favorites\]](#)

- Plume Dispersion in the Convective Boundary Layer. Part II: Analyses of CONDORS Field Experiment Data
G. A. Briggs

Journal of Applied Meteorology
Volume 32, Issue 8 (August 1993) pp. 1388-1425
doi: 10.1175/1520-0450(1993)032<1388:PDITCB>2.0.CO;2
Abstract

Extensive analyses are performed on data from the CONDORS (convective diffusion observed with remote sensors) field experiment, described in detail by Eberhard et al. Convective scaling is used to facilitate comparisons with laboratory and ...

[\[Abstract\]](#) [\[PDF \(3096 KB\)\]](#) [\[Add to Favorites\]](#)