

NOAA/ESRL/Physical Sciences Division Publications – CY 2006

Alexander, M., J. Yin, G. Branstator, A. Capotondi, C. Cassou, R. Cullather, Y.-O. Kwon, J. Norris, J. Scott, and Ilana Wainer, 2006: Extratropical atmosphere-ocean variability in CCSM3. *Journal of Climate*, 19:2496-2525

Andreas, E. L., K. J. Claffey, R. E. Jordan, **C. W. Fairall, P. S. Guest, P. O. G. Persson, and A. A. Grachev, 2006:** Evaluations of the von Kármán constant in the atmospheric surface layer. *Journal of Fluid Mechanics*, 559:117-149.

Andreas, E.L., **V.E. Ostashev, S.L. Collier, N.P. Symons, D.F. Aldridge, and D. Marlin, 2006:** Time-domain calculations of sound interactions with outdoor ground surfaces. *Applied Acoustics*, 68:173-200.

Angevine, W.M., **J.E. Hare, C.W. Fairall, D.E. Wolfe, R.J. Hill, W.A. Brewer, and A.B. White, 2006:** Structure and formation of the highly stable marine boundary layer over the Gulf of Maine. *Journal of Geophysical Research – Atmospheres*, 111(D23), Article No. D23S22.

Blindish, R., T.J. Jackson, **A.J. Gasiewski, M. Klein, and E.G. Njoku, 2006:** Soil moisture mapping and AMSR-E validation using the PSR in SMEX02. *Remote Sensing of the Environment*, 103(2):127-139.

Bao, J.-W., S. A. Michelson, P. J. Neiman, F. M. Ralph, and J. M. Wilczak, 2006: Interpretation of enhanced integrated water vapor bands associated with extratropical cyclones: Their formation and connection to tropical moisture. *Monthly Weather Review*, 134(4):1063-1080.

Barsugli J. J., S. I. Shin and P. D. Sardeshmukh, 2006: Sensitivity of global warming to the pattern of tropical ocean warming. *Climate Dynamics*, 27:483-492.

Blomquist, B. W., **C. W. Fairall, B. J. Huebert, D. J. Kieber, and G. R. Westby, 2006:** DMS sea-air transfer velocity: Direct measurements by eddy covariance and parameterization based on the NOAA/COARE gas transfer model. *Geophysical Research Letters*, 33(7), Article No. LO7601.

Compo, G. P., J. S. Whitaker, P. D. Sardeshmukh, 2006: Feasibility of a 100-year reanalysis using only surface pressure data. *Bulletin of the American Meteorological Society*, 87:175-190.

Cronin, M. F., N. A. Bond, **C. W. Fairall and R. A. Weller, 2006:** Surface cloud forcing in the East Pacific Stratus Deck/Cold Tongue/ITCZ Complex. *Journal of Climate*, 19: 392-409.

Cronin, M. F., **C. W. Fairall**, and M. J. McPhaden, 2006: An assessment of buoy-derived and numerical weather prediction surface heat fluxes in the tropical Pacific. *Journal of Geophysical Research*, 111(C6), Article No. C06038.

Daniel, J.S., R.W. Portmann, H.L. Miller, S. Solomon, A.O. Langford, C.S. Eubank, R. Schofield, D. Turner, and **M.D. Shupe**, 2006: Cloud property estimates from zenith spectral measurements of scattered sunlight between 0.9 and 1.7 μm . *Journal of Geophysical Research*, 111(D16), Article No. D16208.

Fairall, C.W., L. Bariteau, **A.A. Grachev**, **R.J. Hill**, **D.E. Wolfe**, **W.A. Brewer**, S.C. Tucker, **J.E. Hare**, W.M. Angevine, 2006: Turbulent bulk transfer coefficients and ozone deposition velocity in the International Consortium for Atmospheric Research into Transport and Transformation. *Journal of Geophysical Research – Atmospheres*, 111(D23), Article No. D23S20.

Godin, O.A., 2006: Calculation of amplitudes of acoustic normal modes from the reciprocity principle. *Journal of the Acoustical Society of America*, 119(4):2096-2100.

Godin, O., 2006: Recovering the acoustic Greens Function from ambient noise cross-correlation in an inhomogeneous moving medium. *Physical Review Letters*, 97(5), Article No. 054301.

Godin, O.A., V.U. Zavorotny, **A.G. Voronovich**, and V.V. Goncharov, 2006: Refraction of sound in a horizontally inhomogeneous, time-dependent ocean. *IEEE Journal of Oceanic Engineering*, 31(2):384-401.

Goedecke, G.H., D.K. Wilson, and **V.E. Ostashev**, 2006: Quasi-wavelet models of turbulent temperature fluctuations. *Boundary-Layer Meteorology*, 120:1-23.

Hall, N. M. J., **G. N. Kiladis**, and C. D. Thorncroft, 2006: Three dimensional structure and dynamics of African easterly waves. Part II: Dynamical modes. *Journal of the Atmospheric Sciences*, 63:2231-2245.

Hamill, T. M., J. S. Whitaker, and S. L. Mullen, 2006: Reforecasts: An important dataset for improving weather predictions. *Bulletin of the American Meteorological Society*, 87:33-46.

Hamill, T. M., 2006: Ensemble-Based Atmospheric Data Assimilation. Chapter in *Predictability of Weather and Climate*, Cambridge Press, 124-156.

Han, W., W. T. Liu, and **J. Lin**, 2006: Impact of atmospheric submonthly oscillations on sea surface temperature of the tropical Indian Ocean. *Geophysical Research Letters*, 33, Article No. L03609.

Han, W., **T. Shinoda**, L.-L. Fu, and J. P. McCreary, 2006: Impact of atmospheric intraseasonal oscillations on the Indian Ocean Dipole during the 1990s. *Journal of Physical Oceanography*, 36:670-690.

Hansen, J. A., and **C. Penland**, 2006: Efficient approximate techniques for integrating stochastic differential equations. *Monthly Weather Review*, 134(10):3006-3014.

Higgins, W., D. Ahijevych, J. Amador, A. Barros, E. H. Berbery, E. Caetano, R. Carbone, P. Ciesielski, R. Cifelli, M. Cortez-Vazquez, A. Douglas, M. Douglas, G. Emmanuel, **C. Fairall**, D. Gochis, D. Gutzler, T. Jackson, R. Johnson, **C. King**, T. Lang, M.-I. Lee, D. Lettenmaier, R. Lobato, V. Magaña, J. Meiten, K. Mo, S. Nesbitt, F. Ocampo-Torres, E. Pytlak, P. Rogers, S. Rutledge, J. Schemm, S. Schubert, **A. White**, **C. Williams**, A. Wood, **R. Zamora** and C. Zhang, 2006: The NAME 2004 Field Campaign and modeling strategy. *Bulletin of the American Meteorological Society*, 87:79-94.

Hill, R.J., 2006: Opportunities for use of exact statistical equations. *Journal of Turbulence*, 7(43):1-13, ISSN:1468-248 (online only).

Hoerling, M., J. Hurrell, and **J. Eischeid**, 2006: Detection and attribution of 20th Century northern and southern African rainfall change. *Journal of Climate*, 19:3989-4008.

Hoerling, M. P., A. Kumar, **T. Xu**, **G. Bates** and B. Jha, 2006: Warm oceans warm land temperatures. *EOS, Transactions of the American Geophysical Union*, 87:189-193.

Jackson, D. L., **G. A. Wick**, and J. J. Bates, 2006: Near-surface retrieval of air temperature and specific humidity using multisensor microwave satellite observations, *Journal of Geophysical Research-Atmospheres*, 111(D10), Article No. D10306.

Johnson, J.T., **A.J. Gasiewski**, B. Guner, G.A. Hampson, S.W. Ellingson, R. Krishnamachari, N. Niamsuwan, **E. McIntyre**, **M. Klein**, **V.Y. Leuski**, 2006: Airborne radio-frequency interference studies at C-band using a digital receiver. *IEEE Transactions on Geoscience and Remote Sensing*, 44(7):1974-1985.

Kiladis, G. N., C. D. Thorncroft, and N. M. J. Hall, 2006: Three dimensional structure and dynamics of African easterly waves. Part I: Observations. *Journal of the Atmospheric Sciences*, 63:2212-2230.

Kiladis, G. N., and B. E. Mapes, 2006: Convective life cycles and scale interactions in tropical waves. *Dynamics of Atmospheres and Oceans*, 42(1-2):1-2 (Preface).

Kingsmill, D. E., **P. J. Neiman**, **F. M. Ralph**, and **A. B. White**, 2006: Synoptic and topographic variability of Northern California precipitation characteristics in landfalling winter storms observed during CALJET. *Monthly Weather Review*, 134(8):2072-2094.

Krishna K., B. Rajagopalan, **M. Hoerling, G. Bates**, and M. Cane, 2006: Unraveling the mystery of Indian Monsoon Failure during El Niño. *Science*, 314:115-119.

Lau, E.M., S.K. Avery, J.P. Avery, D. Janches, S.E. Palo, **R. Schafer**, N.A. Makarov, 2006: Statistical characterization of the meteor trail distribution at the South Pole as seen by a VHF interferometric meteor radar. *Radio Science*, 41.

Li, S., M. P. Hoerling, S. Peng, and **K. M. Weickmann**, 2006: The annular response to tropical Pacific SST forcing. *Journal of Climate*, 19:1802-1819.

Lin, J.-L., G. N. Kiladis, B. E. Mapes, **K. M. Weickmann**, K. R. Sperber, W. Lin, M. C. Wheeler, S. D. Schubert, A. Del Genio, L. J. Donner, S. Emori, J.-F. Gueremy, F. Hourdin, P. J. Rasch, E. Roeckner, and J. F. Scinocca, 2006: Tropical intraseasonal variability in 14 IPCC AR4 climate models. Part I: Convective signals. *Journal of Climate*, 19:2665-2690.

Markus, T., D.J. Cavalieri, **A.J. Gasiewski, M. Klein**, J.A. Maslanik, D.C. Powell, **B.B. Stankov**, J.C. Stroeve, and M. Sturm, 2006: Microwave signatures of snow on sea ice: Observations. *IEEE Transactions on Geoscience and Remote Sensing*, 44(11):3081-3090.

Maslanik, J.A., M. Sturm, M.B. Rivas, **A.J. Gasiewski**, J.E. Heinrichs, U.C. Herzfeld, J. Holmgren, **M. Klein**, T. Markus, D.K. Perovich, J.G. Sonntag, J.C. Stroeve, and K. Tape, 2006: Spatial variability of barrow-area shore-fast sea ice and its relationships to passive microwave emissivity. *IEEE Transactions on Geoscience and Remote Sensing*, 44(11):3021-3031.

Matrosov, S. Y., Robert Cifelli, P. C. Kennedy, S. W. Nesbitt, S. A. Rutledge, V. N. Bringi, and **B. E. Martner**, 2006: A comparative study of rainfall retrievals based on specific differential phase shifts at X- and S-Band radar frequencies. *Journal of Atmospheric and Oceanic Technology*, 23:952-963.

Matrosov, S.Y., P.T. May, and **M. Shupe**, 2006: Rainfall profiling using Atmospheric Radiation Measurement Program vertically pointing 8-mm wavelength radars. *Journal of Atmospheric and Oceanic Technology*, 23(11):1478-1491.

Millet, D.B., A.H. Goldstein, R. Holzinger, B.J. Williams, J.D. Allan, J.L. Jimenez, D.R. Worsnop, J.M. Roberts, **A.B. White**, R.C. Hudman, I.T. Bertschi, and A. Stohl, 2006: Chemical characteristics of North American surface layer outflow: Insights from Chebogue Point, Nova Scotia. *Journal of Geophysical Research – Atmospheres*, 111(D23), Article No. D23S53.

Murnane, R. J., and **H. F. Diaz**, 2006: Assessing, modeling, and monitoring the impacts of extreme climate events. *EOS, Transactions of the American Geophysical Union*, 87(3):25.

Murphrey, H. V., R. M. Wakimoto, C. Flamant and **D. E. Kingsmill**, 2006: Dryline on 19 June 2002 during IHOP. Part I: Airborne Doppler and LEANDRE II analyses of the thin line structure and convection initiation. *Monthly Weather Review*, 134(1):406-430.

Neiman, P. J., F. M. Ralph, A. B. White, D. D. Parrish, J. S. Holloway, and D. L. Bartels, 2006: A multiwinter analysis of channeled flow through a prominent gap along the Northern California Coast during CALJET and PACJET. *Monthly Weather Review*, 134(7):1815-1841.

Penland, C., and L. Matrosova, 2006: Studies of El Niño and inter-decadal variability in tropical sea surface temperatures using a non-normal filter. *Journal of Climate*, 19(22):5796-5815.

Powell, D.C., T. Markus, D.J. Cavalieri, **A.J. Gasiewski, M. Klein**, J.A. Maslanik, J.C. Stroeve, and M. Sturm, 2006: Microwave signatures of snow on sea ice: Modeling. *IEEE Transactions on Geoscience and Remote Sensing*, 44(11):3091-3102.

Quan, X. , M. Hoerling, J. Whitaker, G. Bates, and **T. Xu**, 2006: Diagnosing sources of U.S. seasonal forecast skill. *Journal of Climate*, 19:3279-3293.

Ralph, F. M., P. J. Neiman, G. A. Wick, S. I. Gutman, M. D. Dettinger, D. R. Cayan, and **A. B. White**, 2006: Flooding on California's Russian River: Role of atmospheric rivers. *Geophysical Research Letters*, 33(13), Article No. L13801.

Roundy, P. E., and G. N. Kiladis, 2006: Observed relationships between oceanic Kelvin waves and atmospheric forcing. *Journal of Climate*, 19:5253-5272.

Schmidt, G. A., R. Ruedy, J. E. Hansen, I. Aleinov, N. Bell, M. Bauer, S. Bauer, B. Cairns, V. Canuto, Y. Cheng, A. Del Genio, G. Faluvegi, A. D. Friend, T. M. Hall, Y. Hu, M. Kelley, N.Y. Kiang, D. Koch, A. A. Lacis, J. Lerner, K. K. Lo, R. L. Miller, L. Nazarenko, V. Oinas, **J. Perlitz**, D. Rind, A. Romanou, G. L. Russell, Mki. Sato, D. T. Shindell, P. H. Stone, S. Sun, N. Tausnev, D. Thresher, and M.-S. Yao, 2006: Present day atmospheric simulations using GISS ModelE: Comparison to in-situ, satellite and reanalysis data. *Journal of Climate*, 19:153-192.

Shin, S.-I., P. D. Sardeshmukh, R. S. Webb, R. J. Oglesby, and **J. J. Barsugli**, 2006: Understanding the Mid-Holocene Climate. *Journal of Climate*, 19:2801-2817.

Shupe, M. D., S. Y. Matrosov, and **T. Uttal**, 2006: Arctic mixed-phase cloud properties derived from surface-based sensors at SHEBA. *Journal of the Atmospheric Sciences*, 63(2):697-711.

Solomon, A., and D. Zhang, 2006: Pacific subtropical cell variability in coupled climate model simulations of the late 19th-20th Century. *Ocean Modelling*, 15(3-4):236-249.

Solomon, A., and I. Wainer, 2006: Pacific tropical-extratropical thermocline water mass exchanges in the NCAR Coupled Climate System Model V.3. *Ocean Modelling*, 15(3-4):218-235.

Solomon, A., 2006: The impact of latent heat release on polar climate. *Geophysical Research Letters*, 33(7), Article No. L07716.

Stensrud, D. J., N. Yussouf, M. E. Baldwin, J. T. McQueen, J. Du, B. Zhou, B. Ferrier, G. Manikin, **F. M. Ralph, J. M. Wilczak, A. B. White, I. Djilalova, J.-W. Bao, R. J. Zamora**, S. G. Benjamin, P. A. Miller, T. L. Smith, T. Smirnova and M. F. Barth, 2006: The New England High-Resolution Temperature Program. *Bulletin of the American Meteorological Society*, 87(4):491-498.

Straub, K. H., **G. N. Kiladis**, and P. E. Ciesielski, 2006: The role of equatorial waves in the onset of the South China Sea summer monsoon and the demise of El Niño during 1998. *Dynamics of the Atmospheres and Oceans*, 42(1-4):216-238.

Sun, D.-Z. and **T. Zhang** 2006: A regulatory effect of ENSO on the time-mean thermal stratification of the equatorial upper ocean. *Geophysical Research Letters*, 33, Article No. L07710.

Sun, D.-Z., T. Zhang, C. Covey, S. Klein, W. D. Collins, J. J. Hack, J. T. Kiehl, G.A. Meehl, I.M. Held, and M. Suarez, 2006: Radiative and dynamical feedbacks over the equatorial cold-tongue: Results from nine atmospheric GCMs. *Journal of Climate*, 19:4059-4074.

Sura, P., M. Newman, and **M. A. Alexander**, 2006: Daily to decadal sea surface temperature variability driven by state-dependent stochastic heat fluxes. *Journal of Physical Oceanography*, 36(10):1940-1958.

Swann, A., A. H. Sobel, S. E. Yuter, and **G. N. Kiladis**, 2006: Observed radar reflectivity in convectively coupled Kelvin and mixed Rossby-gravity waves. *Geophysical Research Letters*, 33(10), Article No. L10804.

Vecherin, S.N., **V.E. Ostashev**, G.H. Goedecke, D.K. Wilson, and **A.G. Voronovich**, 2006: Time-dependent stochastic inversion in acoustic travel-time tomography of the atmosphere. *Journal of the Acoustical Society of America*, 119(5):2579-2588.

Voronovich, A.G., and **V.E. Ostashev**, 2006: Low-frequency sound scattering by internal waves in the ocean. *Journal of the Acoustical Society of America*, 119(3):1406-1419.

Voronovich, A.G., and **V.E. Ostashev**, 2006: Mean field of a low-frequency sound wave propagating in a fluctuating ocean. *Journal of the Acoustical Society of America*, 119(3):2101-2105.

Wainer, I., A. Lazar, and **A. Solomon**, 2006: Tropical extra-tropical thermocline water mass exchanges in the Community Climate Model v.3. Part I: The Atlantic Ocean. *Ocean Sciences*, 2:137-146.

Waliser, D., **K. Weickmann, R. Dole, S. Schubert**, O. Alves, C. Jones, **M. Newman**, H.-L. Pan, **A. Roubicek**, S. Saha, **C. Smith**, H. Van den Dool, F. Vitart, M. Wheeler, and **J. Whitaker**, 2006: The Experimental MJO Prediction Project. *Bulletin of the American Meteorological Society*, 87:425-431.

Wei, M., Z. Toth, R. Wobus, Y. Zhu, C. H. Bishop, and **X. Wang**, 2006: Ensemble transform Kalman filter-based ensemble perturbations in an operational global prediction system at NCEP. *Tellus*, 58A:28-44.

Whitaker, J. S., F. Vitart, and **X. Wei**, 2006: Improving Week Two forecasts with multi-model re-forecast ensembles. *Monthly Weather Review*, 134:2279-2284.

White, A.B., C. Senff, A.N. Keane, L. Darby, I Djalalova, D.R. Ruffieux, **D.E. White**, B.J. Williams, and A.H. Goldstein, 2006: A wind profiler trajectory tool for air quality transport applications. *Journal of Geophysical Research-Atmospheres*, 111(D23), Article No. D23S23.

Wilczak, J., S. McKeen, **I. Djalalova**, G. Grell, S. Peckham, W. Gong, V. Bouchet, R. Moffet, J. McHenry, J. McQueen, P. Lee, Y. Tang, G.R. Carmichael, 2006: Bias-corrected ensemble and probabilistic forecasts of surface ozone over eastern North America during the Summer of 2004. *Journal of Geophysical Research – Atmospheres*, 111(D23), Article No. D23S28.

Yuter, S.E., **D.E. Kingsmill**, L.B. Nance, and M. Loffler-Mang, 2006: Observations of precipitation size and fall speed characteristics within coexisting rain and wet snow. *Journal of Applied Meteorology and Climatology*, 45(10):1450-1464.

Zhang, T. and **D.-Z. Sun**, 2006: Response of water vapor and clouds to El Niño warming in three NCAR models. *Journal of Geophysical Research*, 111(D17), Article No. D17103.

Zhou, M., X. Zeng, M. Brunke, Z. Zhang, and **C. Fairall**, 2006: An analysis of statistical characteristics of stratus and stratocumulus over Eastern Pacific. *Geophysical Research Letters*, 33, Article No. L02807.

Zilitinkevich, S.S., J.C.R. Hunt, I.N. Esau, **A.A. Grachev**, D.P. Lalas, E. Akylas, M. Tombrou, **C.W. Fairall**, H.J.S. Gernando, A.A. Baklanov, and S.M. Joffre, 2006: The influence of large convective eddies on the surface-layer turbulence. *Quarterly Journal of the Royal Meteorological Society*, 132(618):1423-1456.

Zuidema, P., B. E. Mapes, **J. L. Lin**, and **C. Fairall**, 2006: The interaction of clouds and dry air in the Eastern tropical Pacific. *Journal of Climate*, 19(18):4531-4544.