

Coare snow/ice flux routine

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April 19, 2005

The coare bulk flux algorithm has been adapted to give surface turbulent fluxes over flatish snow or ice covered surface. The transfer coefficients are based on measurements from the SHEBA program, which was conducted on sea ice in the Beaufort Sea. If direct measurements (or other estimates) of the velocity roughness length are known, they can be substituted in *cor_ice_2.m*. The scalar coefficients are computed using a parameterization in terms of roughness Reynolds number; that can be left unchanged.

The basic algorithm is contained in the matlab routine *cor_ice_2.m*. There is a driver program, *red_alter_1.m*, that reads in data, applies the algorithm, creates a flux figure (see below), and writes an output file. The data in this case are a few weeks of observations from a CMDL site at Alert, Canada. There is no independent verification data. *cor_ice_2.m* calls several other routines which are included in the directory. Basic meteorological inputs for *cor_ice_2.m* are wind speed, air temperature, air humidity, and snow/ice surface temperature. In this case, surface temperature is computed from measured downward and upward IR radiative fluxes in *red_alter_1.m*.

