**Solar Model**

Incoming shortwave is defined using a piecewise function, following half of a period of a sine curve from 7am to 10pm, with a peak of 500 W/m^2. Any other time, incoming radiation is set to zero. Adding albedo gives the following equation for (where is ):

Removing albedo renders the above equation for rather than .

The bulk air temperature model is used for only validation of the model. It is crudely modeled by a sinusoidal temperature profile based on the average high (275 K) and low (261 K) temperatures of Barrow, AK in the past century.