

Roughness Based on Ice Concentration

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C:\Documents and Settings\Ed\My Documents\SHEBA\Bulk Flx Alg\FORTRAN\SHEBA_BFA_20... - [X]

Welcome to the SHEBA Bulk Flux Algorithm, V 2.0.

What is the wind speed (in m/s) and the height (in m) of the observation?
6,10
What is the air temperature (in deg C) and its height?
-20,10
What is the relative humidity (in % with respect to water)?
70,10
What is the surface temperature (in deg C)
and the barometric pressure (in mb)?
-22,1000
Do you know the physical roughness (1) (xi parameter of Banke et al. 1980)
or do you want to determine roughness from the ice concentration (2)?
2
What is the ice concentration in percent?
A value less than 99.5% invokes the algorithm for summer sea ice
and the marginal ice zone.
100

Wind speed = 6.00 m/s at 10.00 meters
Temperature = -20.00 deg C at 10.00 meters
Specific humidity = 5.483E-04 kg/kg at 10.00 meters
Relative humidity with respect to ice = 84.96%
Pressure = 1000.0 mb
Surface temperature = -22.000 deg C
Ice concentration = 100.00%
Aerodynamic roughness model is based on ice concentration.
Concentrations less than 99.5% invoke the summer model.
Iterations = 5
u* = 0.2019 m/s
t* = 0.06679 deg C
q* = 5.303E-07 kg/kg
Obukhov length = 39.102 m
Effective wind = 6.002 m/s
Z0 = 2.305E-04 m
ZT = 9.951E-05 m
ZQ = 1.167E-04 m
R* = 4.083
Surface Stress = 5.654E-02 N/m**2
Sensible Heat Flux = -18.811 W/m**2
Latent Heat Flux = -0.421 W/m**2
Evaporation Rate = -0.013 mm/day
Enter new conditions (1) or end (0)?
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Roughness Based on ξ

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Welcome to the SHEBA Bulk Flux Algorithm, V 2.0.
What is the wind speed <in m/s> and the height <in m> of the observation?
6,10
What is the air temperature <in deg C> and its height?
-20,10
What is the relative humidity <in % with respect to water>?
70,10
What is the surface temperature <in deg C>
and the barometric pressure <in mb>?
-22,1000
Do you know the physical roughness <1> <xi parameter of Banke et al. 1980>
or do you want to determine roughness from the ice concentration <2>?
1
Enter xi in centimeters.
3

Wind speed = 6.00 m/s at 10.00 meters
Temperature = -20.00 deg C at 10.00 meters
Specific humidity = 5.483E-04 kg/kg at 10.00 meters
Relative humidity with respect to ice = 84.96%
Pressure = 1000.0 mb
Surface temperature = -22.000 deg C
Ice concentration = 100.00%
Aerodynamic roughness model is based on physical roughness
with xi = 3.000 cm

Iterations = 5
u* = 0.1741 m/s
t* = 0.06350 deg C
q* = 5.065E-07 kg/kg
Obukhov length = 30.573 m
Effective wind = 6.002 m/s
Z0 = 4.734E-05 m
ZT = 6.568E-05 m
ZQ = 8.245E-05 m
R* = 0.723
Surface Stress = 4.203E-02 N/m**2
Sensible Heat Flux = -15.420 W/m**2
Latent Heat Flux = -0.347 W/m**2
Evaporation Rate = -0.011 mm/day
Enter new conditions <1> or end <0>?
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