### UEB snow module
- **Set Constants**
- Estimate radiation components, considering horizontal measurement, cloud cover, vegetation canopy adjustment
- **Partition Precip into rain and snow**
- **Calculate snow albedo**
- Solve snow energy/mass balance equations; Update state variables (U, SWE, and $\tau$)
- Update snow albedo; temperature
- Update mass balance components

### STEMMUS-FT soil module
- **Forcing PARM**
  - Begin a new time step
  - Update state variable and Set boundary conditions and Time disaggregated Meteorological Forcing
  - Start iteration for current time step
  - SFCC: Total water conservation for $\theta_L$, $\theta_i$
  - Run UEB
  - Update hydrothermal parameters
  - Adjust time step
- Solve balance equations for $\psi$, $T$, $P_g$
- Reach max No. of iterations?
- Converge?
- Convergence reached for current time step?
- End of simulation?
- Repeat current time step
- **Output**

### Update hydrothermal parameters
1. Soil hydraulic conductivity $K_l$; thermal properties $C, \lambda_{eff}$
2. Vapor density, $\rho_v$; diffusivity, $D_V$; dispersivity, $D_{Vg}$
3. Transport coefficient for adsorbed liquid flow (heat of wetting), $D_{Tdisp}$
4. Dry air density, $\rho_{da}$; Gas conductivity, $k_g$

### Solve balance equations for $\psi$, $T$, $P_g$
- CPLD = 1?
  - NO → **BCD**
    - Solve water and energy balance equation **Diff_Moisture_Heat**
  - YES → **ACD-air**
    - Solve dry air balance equation **Air_sub**
- AIR = 1?
  - NO → **ACD**
    - Solve water balance equation **h_sub**
  - YES → **ACD**
    - Solve energy balance equation **Enrgy_sub**