Update of Plant Hydraulics Implementation

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Schematics of plant hydraulics model

- CLM5 PHS (Kennedy et al., 2019) have been implemented in ELM to evaluate how soil water stress affects surface water and energy fluxes:
  - Conforms to ELM big-leaf model
  - Plant is treated as a porous media
  - Use a resistance network approach
  - Hydraulic redistribution included
  - Osmotic potential and water capacity are neglected
  - Steady-state
BTRAN formulation

- Old

\[ \beta = \frac{\psi_c - \psi_s}{\psi_c - \psi_o} \]

- New

\[ \beta = \left[ 1 + \left( \frac{\psi_l}{P_{50,gs}} \right)^a \right]^{-1} \]