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Competition for Light and Water in a Coupled Soil-Plant System

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**Highlights**

- A 3D soil-root model is coupled with a 1D plant xylem flow and photosynthesis model;
- Competition for light and water among multiple trees is investigated numerically;
- Hydraulic redistribution and canopy shading enhance stand resilience to drought;
- Equivalent resistor-capacitor models can reasonably describe stand-level dynamics.

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