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**Calibrating CliMA's land model**

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**Abstract**

The Climate Modeling Alliance (CliMA) is developing an Earth System Model (ESM) designed to learn from data and to use state-of-the-art computing technology. CliMA's ESM incorporates multiple submodels, including land, atmosphere, ocean, and sea ice. We will present CliMA's land model, ClimaLSM, which simulates physical land surface processes. ClimaLSM is highly modular, split up into components including soil, snow, canopy, and rivers, each of which can be individually run and calibrated or combined together to run in tandem. The modularity of ClimaLSM extends to parameterizations within the components themselves, allowing new users to easily add and test additional parameterization models. We will demonstrate how to calibrate ClimaLSM using global data with the specific example of space-based observations of solar induced fluorescence

**.Keywords**

climate modeling, parameterizations, uncertainty quantification