



Results from the Earth System-Snow Model Intercomparison Project

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ESM-SnowMIP, which aims to improve the representation of snow cover in Earth System Models, includes an evaluation of models against multiple variables measured over multiple years at well-instrumented reference sites. Simulations for ten sites with a wide climatic range have now been submitted by more than 25 models, including ESM land-surface schemes, hydrological models, snow physics models and multi-hypothesis ensemble models. Ranges in snow mass simulations are particularly large for warmer sites at which midwinter melt may occur, but simulations for colder sites highlight outliers. Soil temperature simulations have wider ranges at colder sites, with some models showing large cold biases. Choices in parametrizations of snow albedo, compaction, thermal conductivity, hydraulics and coupling with the atmosphere are all found to be influential. Initial ESM-SnowMIP results will be presented and plans for additional experiments will be discussed.