

Experiment name	Tier	Experiment description and design	Configuration	Start and end	No. years per run	Ens. size	No. years total	Science question and/or gap addressed with this experiment	Possible synergies with other runs
Ref-Site	1	Site reference simulations	LND 1-D					Evaluate snow model on site scale	LS3MIP LMIP-H
FA-Site	2	Site simulations, prescribed constant snow albedo	LND 1-D					Evaluate effect of snow albedo variations	Ref-Site
NS-Site	2	Site simulations, prescribed neutral exchange coefficient	LND 1-D					Quantify effect of melt-induced near-surface temperature inversions	Ref-Site
NI-Site	2	Site simulations, no soil insulation	LND 1-D					Diagnose snow soil insulation effect	Ref-Site
LSF-down-scaled-Site	2	Site simulations, downscaled forcing	LND 1-D					Evaluate impact of downscaled gridded forcing in complex topography	Ref-Site
SWE-LSM	1	Prescribed observed snow water equivalent	LND	1980–2014	35	1	35	Evaluate link between snow mass and snow fraction	Land-Hist (LS3MIP)
FA-LSM	2	Land-only simulation, prescribed constant snow albedo	LND	1980–2014	35	1	35	Evaluate effect of snow albedo variations	Land-Hist (LS3MIP)
NI-LSM	2	Land-only simulation, no soil insulation	LND	1850–2014	165	1	165	Diagnose snow soil insulation effect	Land-Hist (LS3MIP)
FLC-LSM	2	Land-only simulation, prescribed common land cover	LND	1980–2014	35	1	35	Diagnose effect of varying prescribed land covers	Land-Hist (LS3MIP)
SnowMIP-rmLC	1 (2)	Prescribed snow conditions 30-year running mean	LND-ATM-OC	1980–2100	121	1 (+ 4)	121 (+484)	Diagnose snow–climate feedback including ocean response	CMIP6 historical, Scenario-MIP, LFMIP-rmLC