

The archive ***Snow_DATA_output.zip*** contains two folders for simulations with INM RAS climate model (INM-CM):

- ***GLOBAL_EXP*** - output from experiment with global version of INM-CM
- ***LOCAL_EXP*** - output from experiments with single-column version of INM-CM

The folder ***GLOBAL_EXP*** contains results of modelling during 20 years from 01.01.1997 for ensemble with six members. Simulations was carried out with 2 version of INM-CM: ***DEFAULT*** (INM-CM48 (Volodin et al., 2018)) and ***NEW*** (updated version of INM-CM48 with new snow layer parametrization).

Folders ***DEFAULT_v_output*** and ***NEW_v_output*** contain six folders (***000***, ..., ***005***), and each of them contains a set of folders corresponding to years from 1997 to 2016 (***147*** -> 1997, ..., ***166*** -> 2016).

For simulations with ***DEFAULT_v*** available monthly data for variables:

- ***SWE*** - snow-water equivalent in meters → ***SWE.dat***
- ***TS*** - surface temperature in degrees Kelvin → ***TS.dat***

For simulations with ***NEW_v*** available monthly data for variables:

- snow-water equivalent in meters → ***SWE.dat***
- surface temperature in degrees Kelvin → ***TS.dat***
- snow density in kg/m³ → ***RHO.dat***
- ratio of liquid water in snow layer [0-1] → ***SNWAT.dat***
- ratio of refrozen melt water in snow layer [0-1] → ***RFRZ.dat***

The data are presented on a model latitude and longitude grid.

The folder ***LOCAL_EXP*** contains results of modelling for 10 sites from ESM-SnowMIP project. Simulations were carried out with ***DEFAULT*** and ***NEW*** description of snow cover, and also experiment for correction of coefficient of heat transfer between surface and atmosphere (***CT***) in mounrains was conducted.

For each of the 10 sites, output variables are available, combined into 2 blocks:

- **surface**
 - BG → heat flux to soil in W/m²
 - TGR → surface temperature in degrees Kelvin
 - QGR → surface humidity
 - SNOW → depth of all snow layer in cm of water-equivalent
 - WSKIN → reservoir for rain water for evaporation
 - REFRZ → refrozen melt water in snow layer in cm of water-equivalent
 - SNOWAT → liquid water in snow layer in cm of water-equivalent
 - RHSN → (only classic) snow density in g/cm³
 - RHFULL → snow layer average density in g/cm³
 - REALSN → classic snow in snow layer in cm of water-equivalent
 - HS → sensible heat flux to atmosphere
 - ES → latent heat flux to atmosphere
 - REFFSN → effective radius of snowflake for classic snow in micrometers
 - REFFFULL → effective radius of snowflake for all snow layer in micrometers
 - SNOWALB → snow broadband albedo [0-1]
 - ASNIR → near-IR snow albedo [0-1]
 - ASVIS → visible snow albedo [0-1]
 - SSQ → snow cover area

- SMLT → runoff of melt water into soil
- **soil**
 - TSG → soil temperature in degrees Celsius
 - WSG → liquid water in soil in g/g
 - WIG → water vapor in soil in g/g
 - VSG → ice in soil in g/g

Sites:

- **oas** → BERM Old Aspen
- **obs** → BERMS Old Black Spruce
- **ojp** → BERMS Old Jack Pine
- **cdp** → Col de Porte
- **rme** → Reynolds Mountain East
- **sap** → Sapporo
- **snb** → Senator Beck
- **sod** → Sodankyla
- **swa** → Swamp Angel
- **wfj** → Weissfluhjoch