

# Persistence of snow in forests and clearings

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# Snow in forests and openings

Falling snow is intercepted by trees, so less snow reaches the ground



Snow on the ground is shaded by trees, so melt is slower

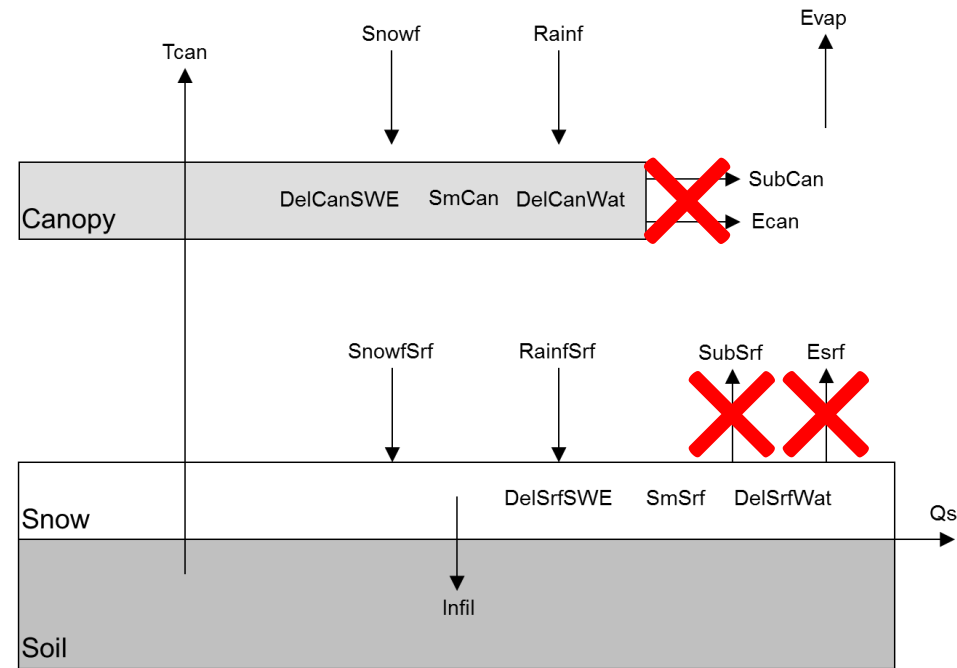
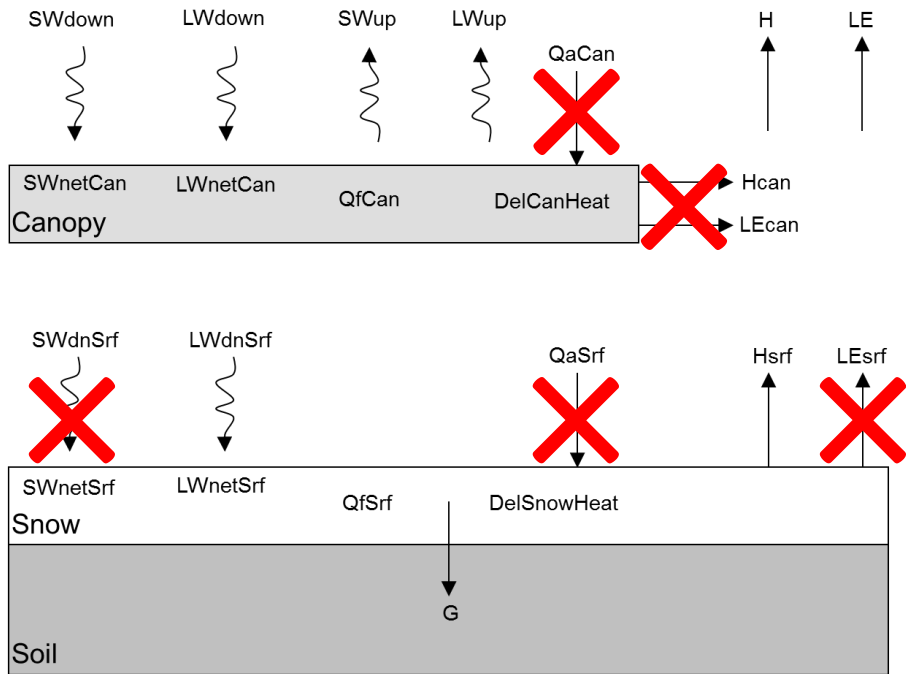


So ... does snow lie longer on the forest floor or in openings?

# Canopy and sub-canopy fluxes

energy balance

water balance

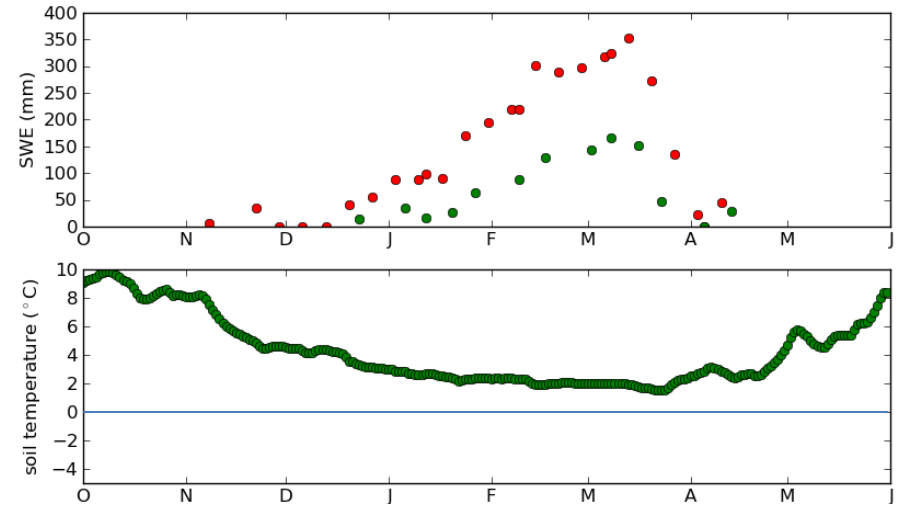
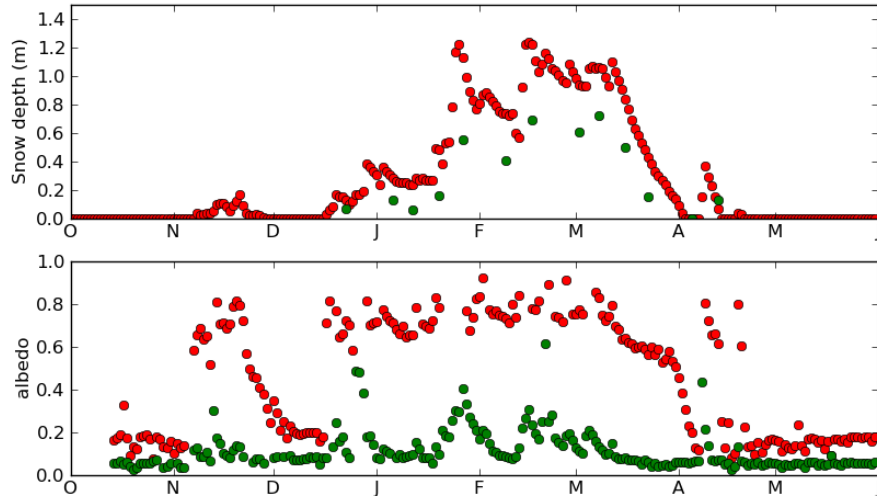


from the SnowMIP2 instructions

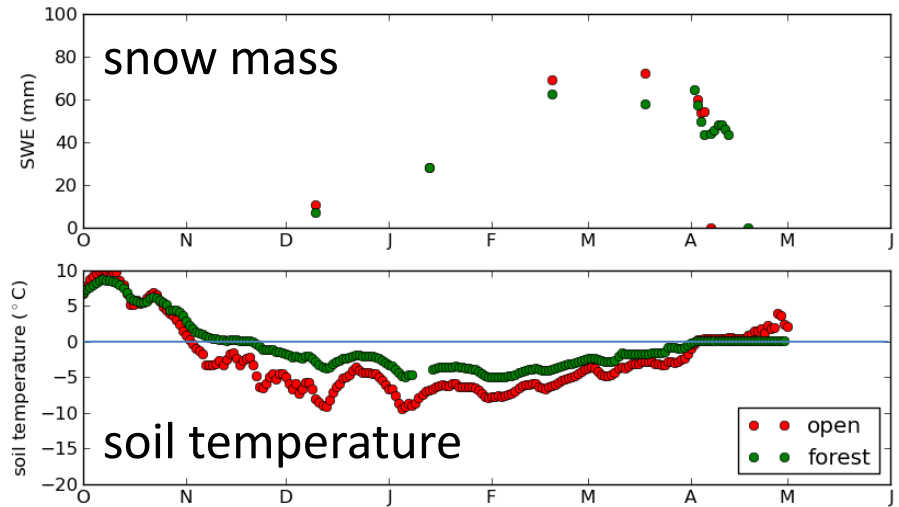
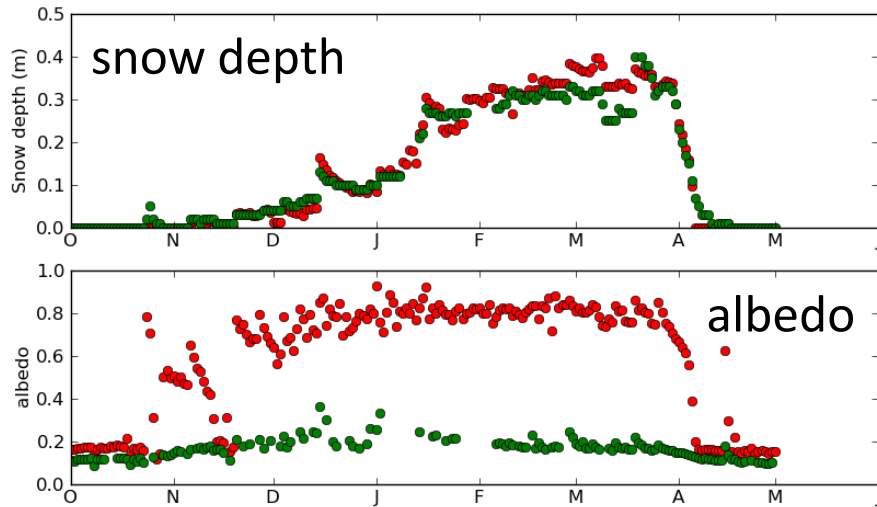
in JULES

# Snow in forests and openings

## Alptal, Switzerland

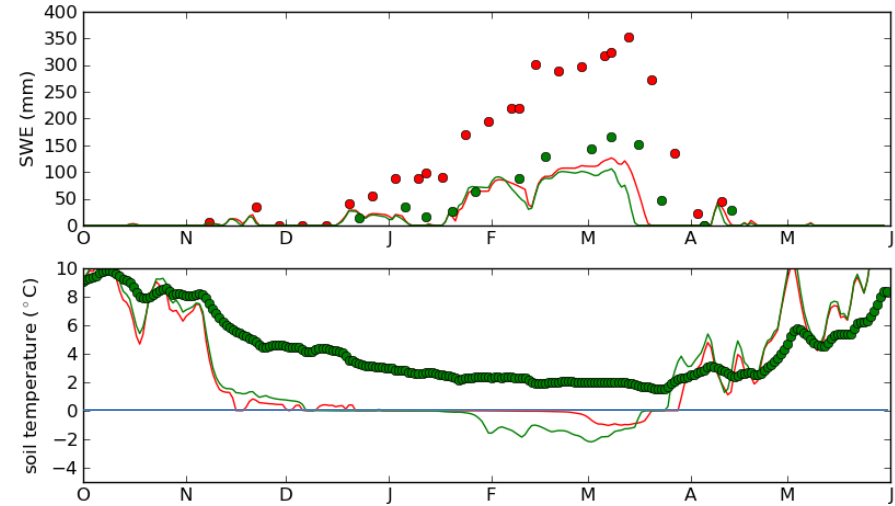
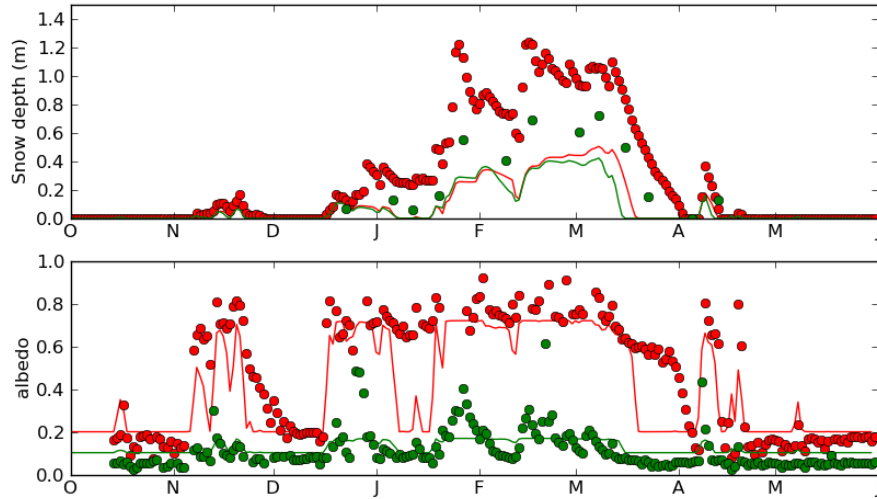


## BERMS, Canada

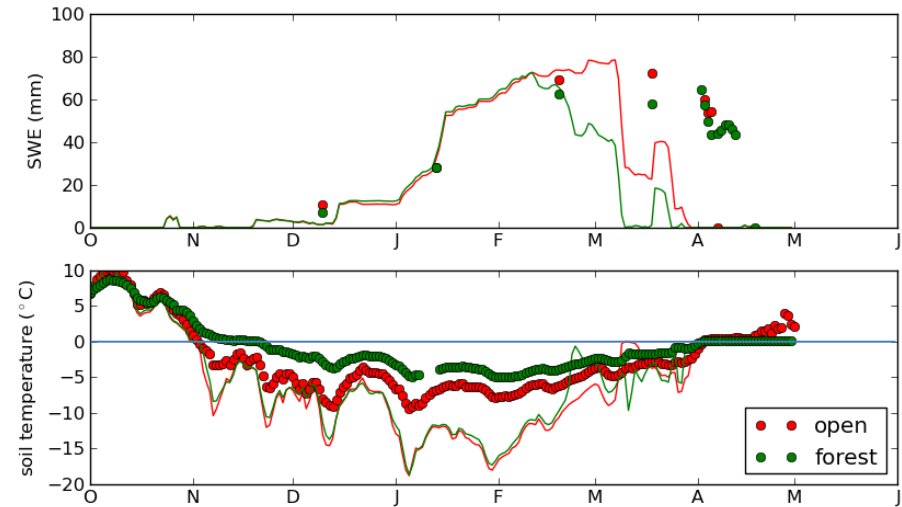
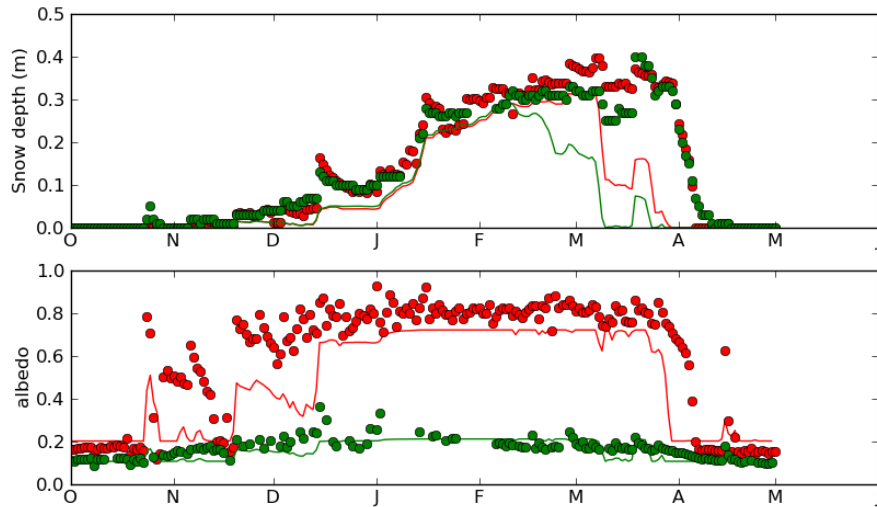


# JULES (Loobos configuration)

## Alptal, Switzerland

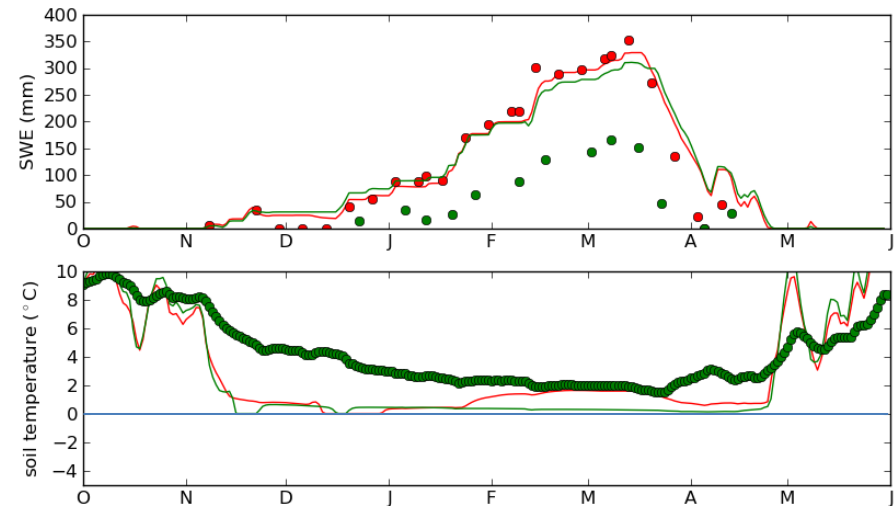
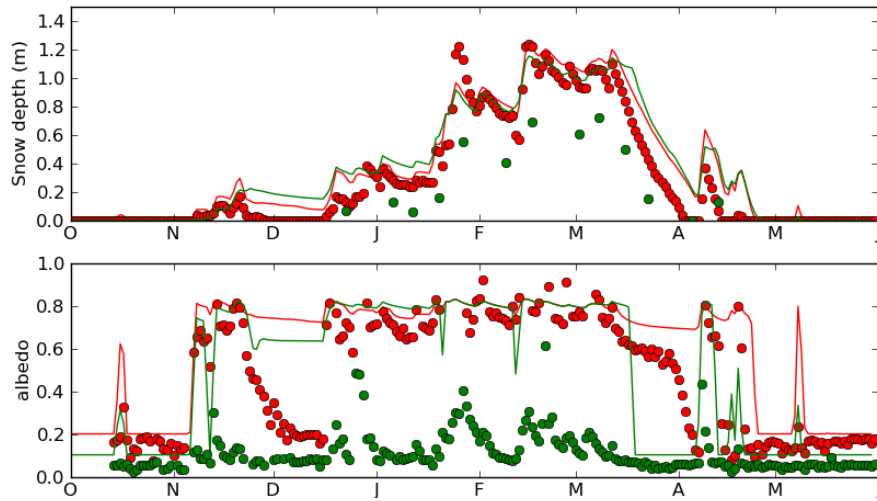


## BERMS, Canada

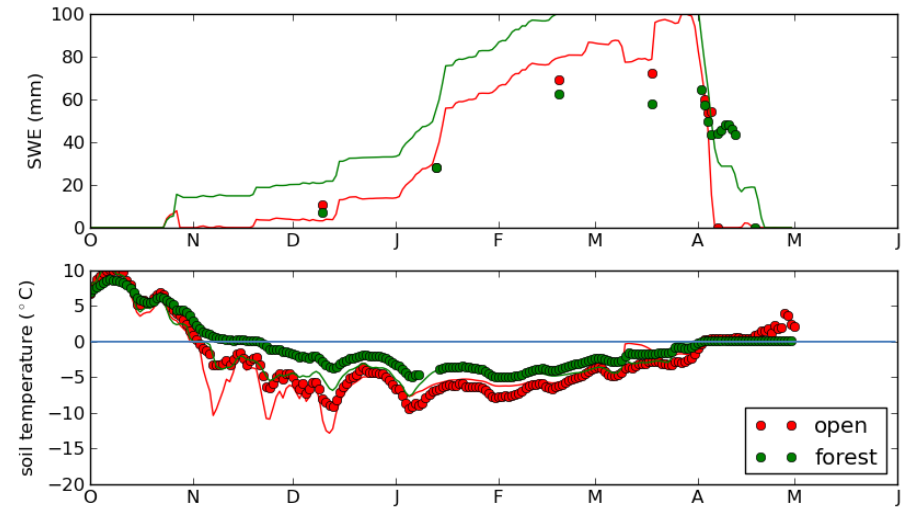
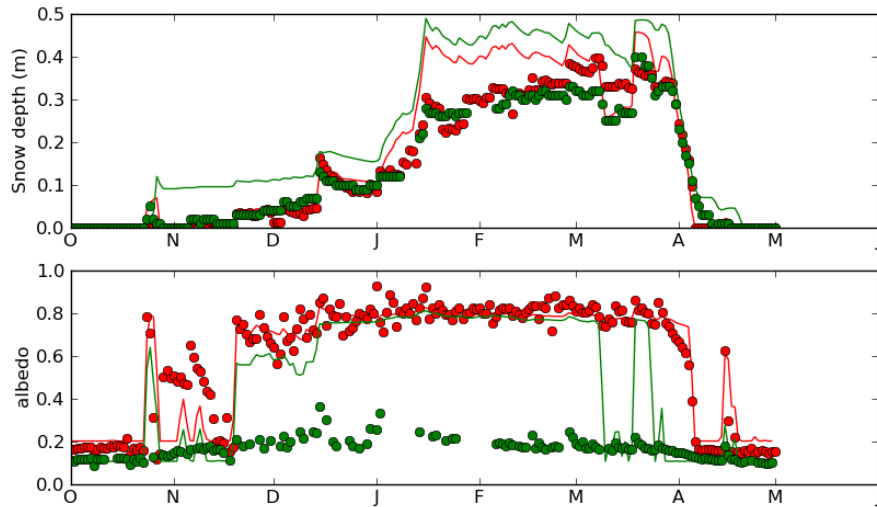


# JULES ("recommended" configuration)

## Alptal, Switzerland

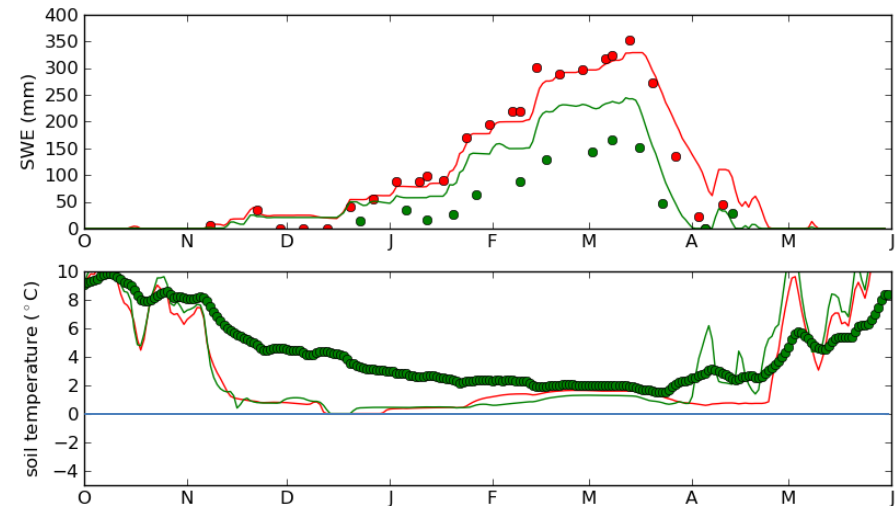
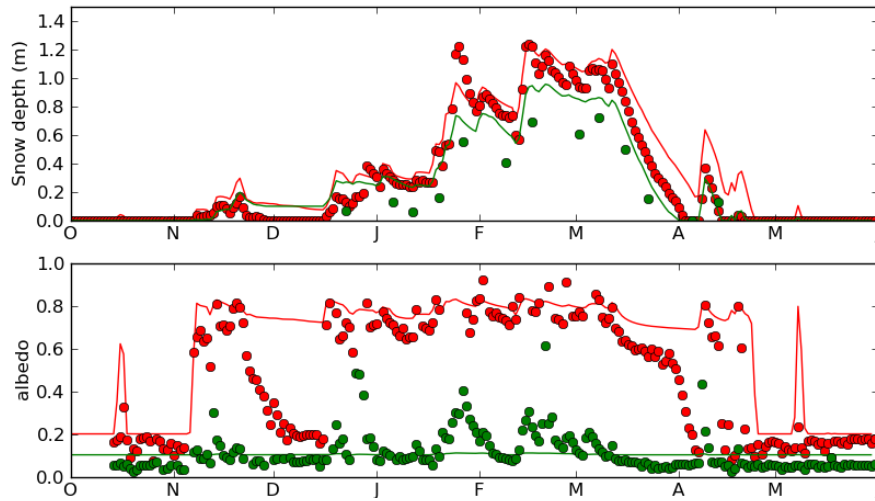


## BERMS, Canada

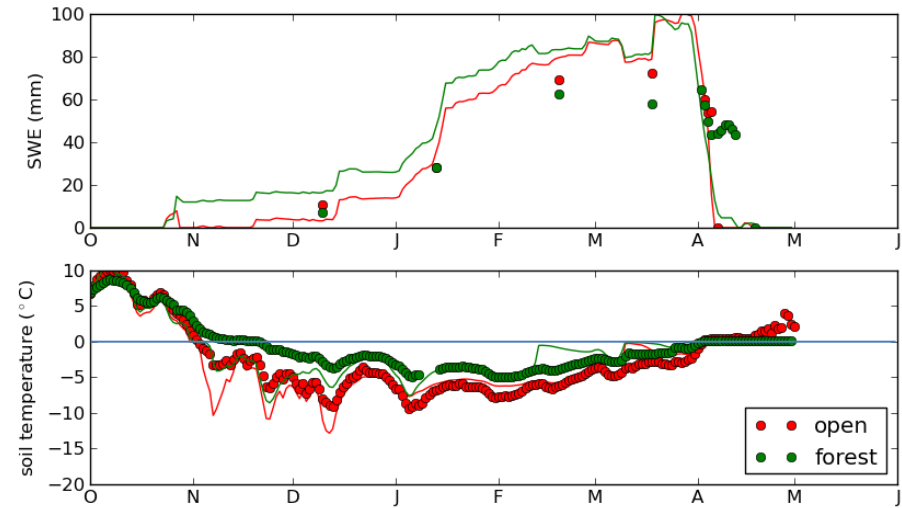
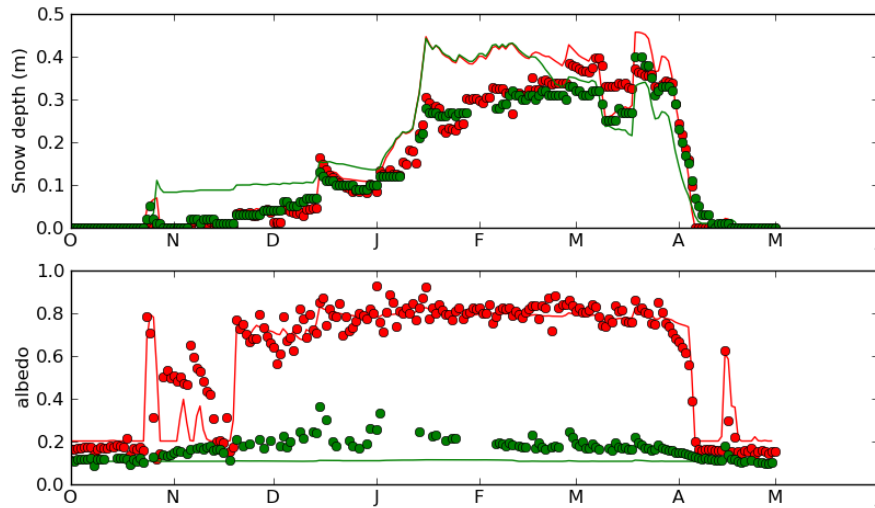


# JULES (recommended configuration)

## Alptal, Switzerland



## BERMS, Canada



# Summary

Switch on the new snowpack model:

```
&JULES_MODEL_LEVELS  
  nsmax = 3
```

Switch on the canopy snow model:

```
&JULES_SWITCHES  
  can_model          = 4  
  l_snow_albedo     = T  
  l_snowdep_surf    = T
```

For short vegetation:

```
  l_point_data      = T
```

For forest (interim fix):

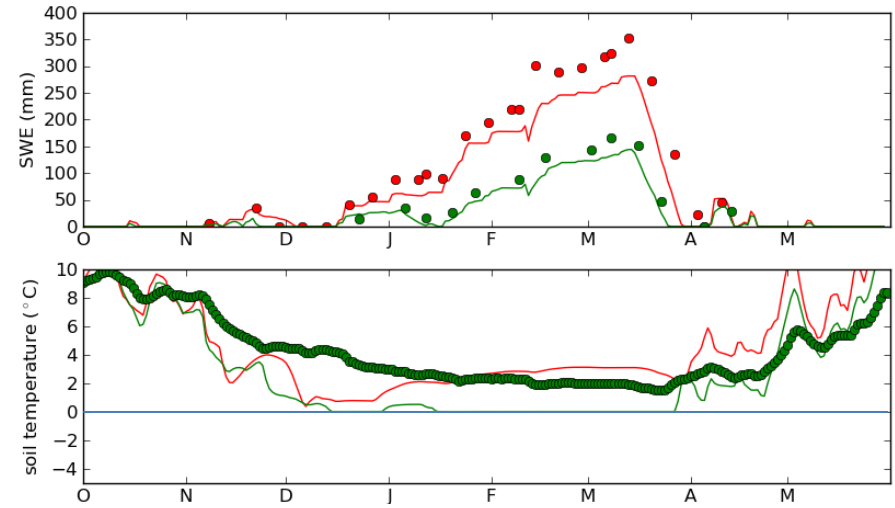
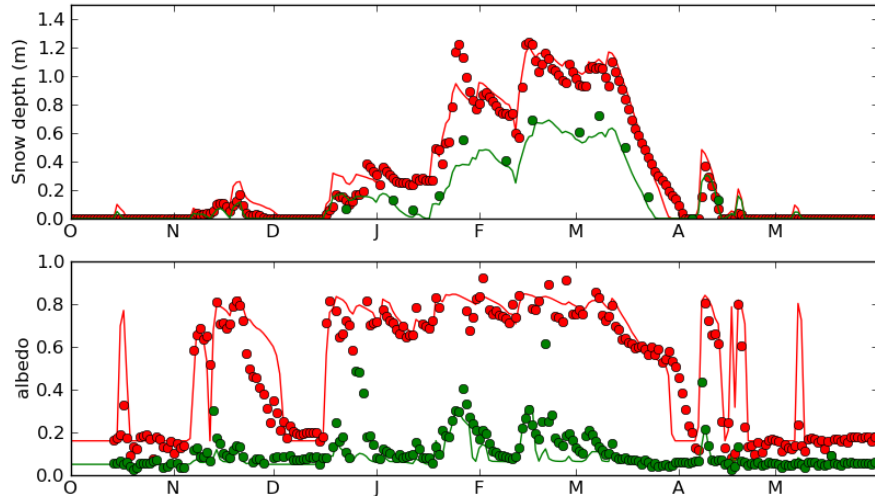
```
  l_point_data      = F
```

Driving data, evaluation data and namelists to be provided as a JULES example



# Two-source sparse canopy model

## Alptal, Switzerland



## BERMS, Canada

