Roshydromet activities:
1.Status of snow density technology.
2.Valday observatory.

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During the period SONDJF 2011/2012:

- Studying EXTPAR and using this system for calculating forecasts
- Review of appropriate satellite information concerning the snow characteristics (snow height, snow water equivalent)
- Development of new algorithm for snow density calculations according to stations' information
- Valday observatory activities

EXTPAR

- The approbation in RHMC was successful
- Forecasts can be calculated with the use of NetCDF format (the problem of non-standart GRIB is not solved)

Satellites for snow cover information (in framework of CORSO)

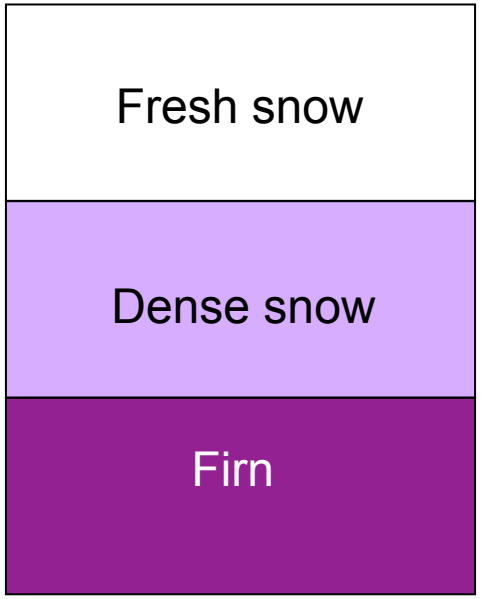
- AMSR-E/Aqua Daily L3 Global Snow Water Equivalent EASE-Grids can be used only for testing, 25km (there are HDF-files up to October 2011)

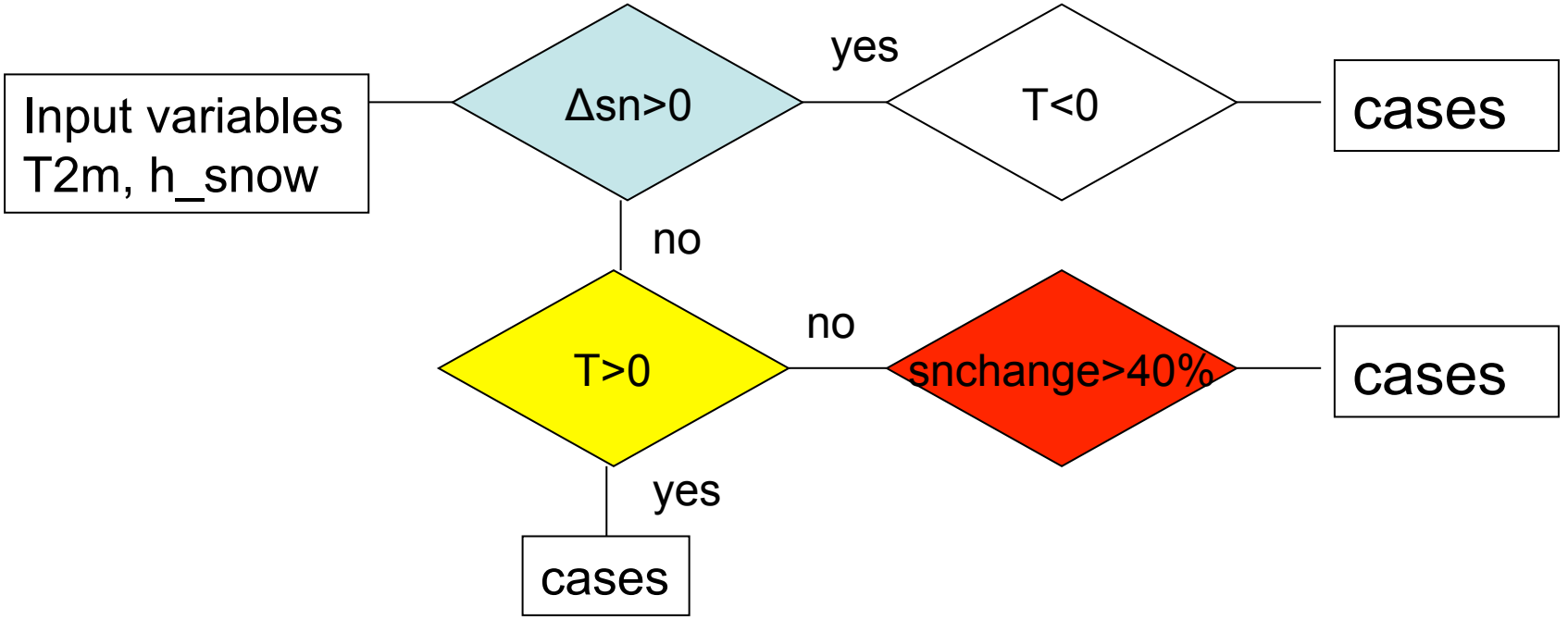
- MODIS/Aqua(Terra) Snow Cover Daily L3 Global 500m Grid, Version 5

- Multisensor snow/ice cover maps: Northern Hemisphere, 4km

New simple algorithm for snow density calculations based on the assimilation in-situ data

Snow cover is represented as the medium with 3 layers: fresh snow, dense snow and firn

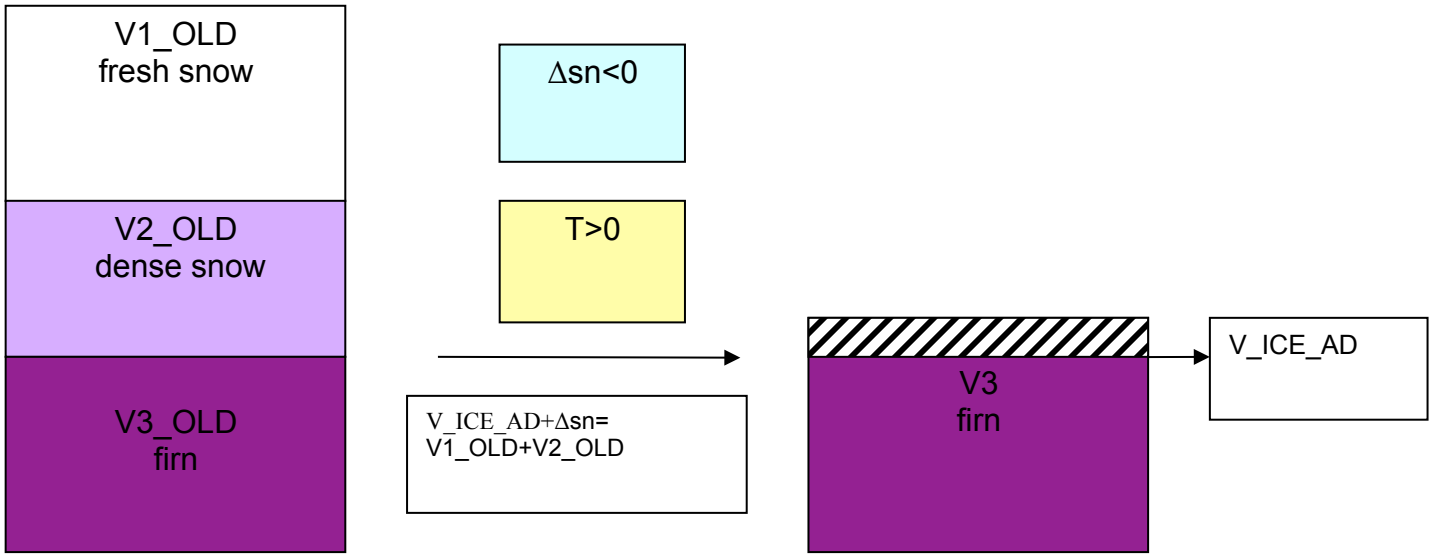




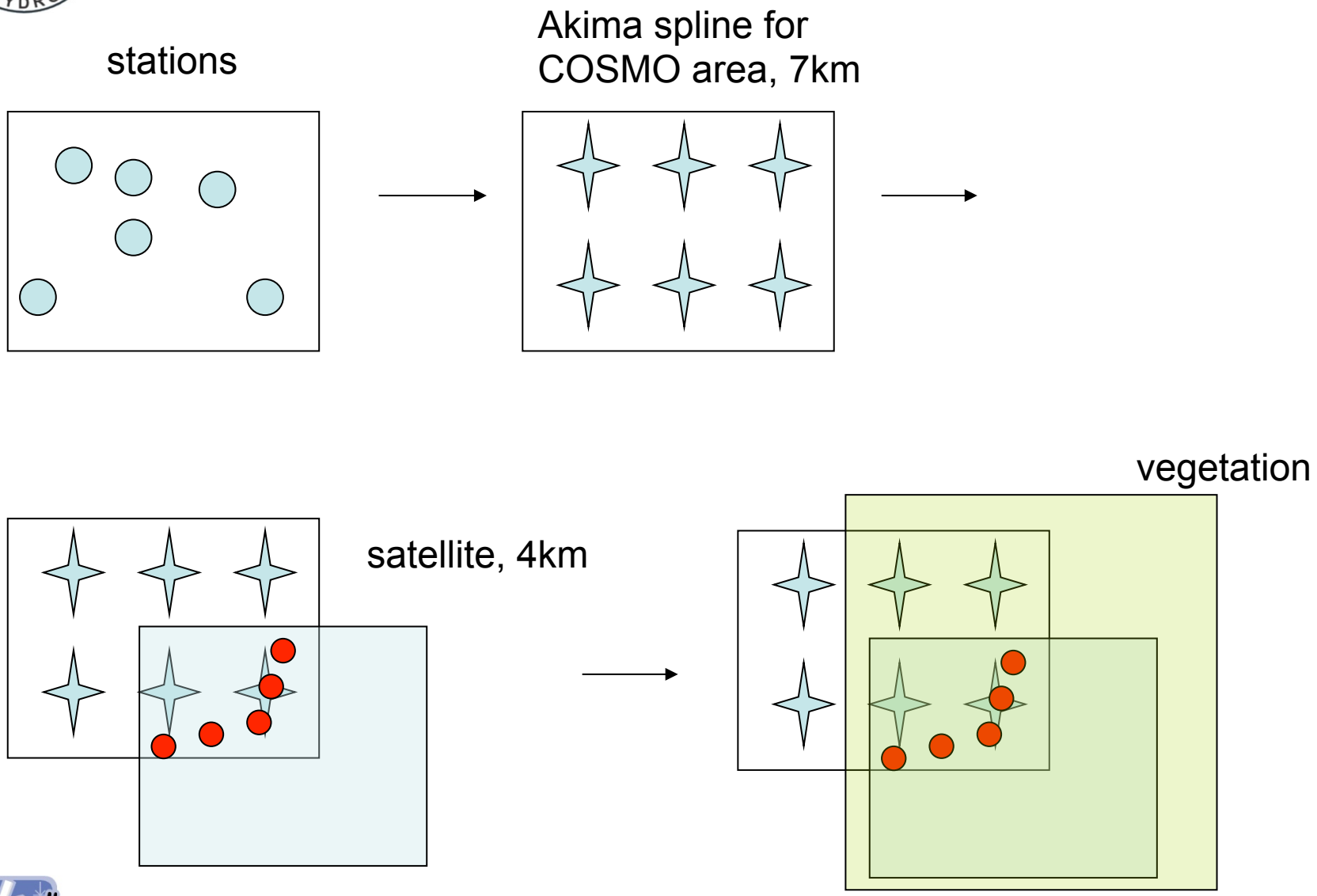
Δsn = h_snow(j)-h_snow(j-1)

We have 20 cases now

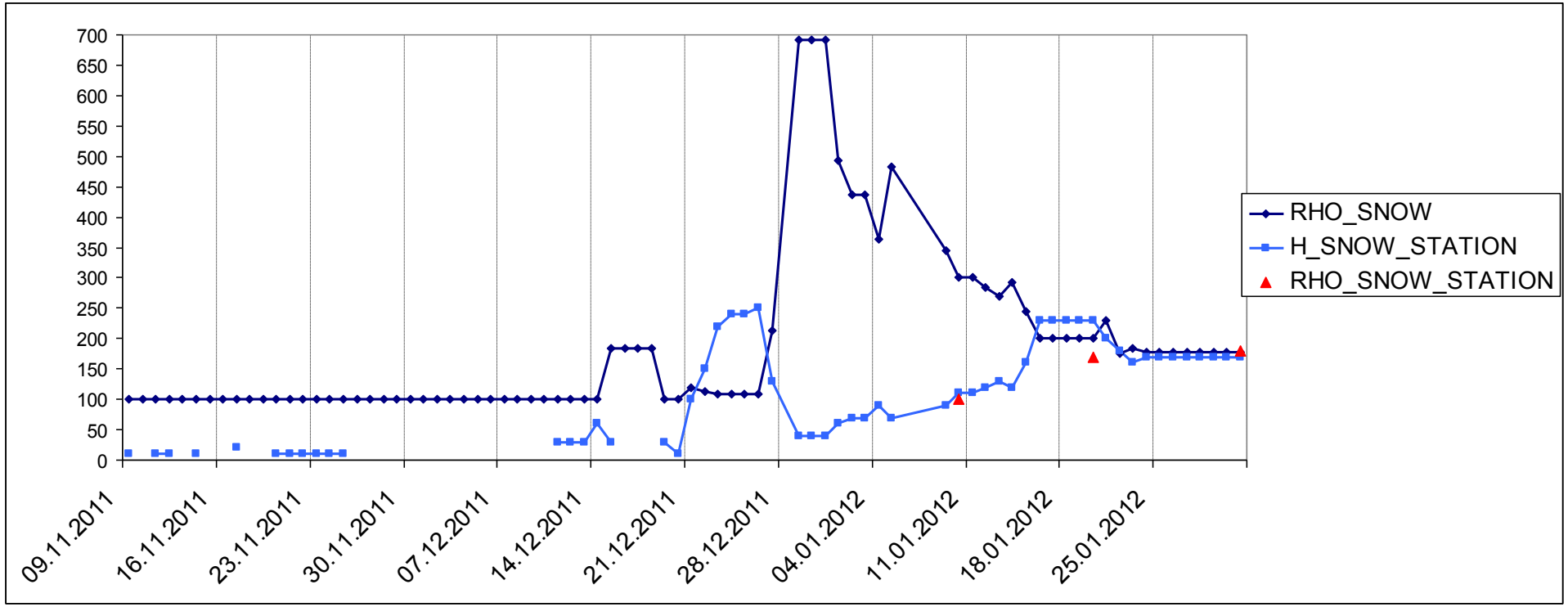
For example, case: V1 and V2 melted



Δsn = V1_OLD + V2_OLD - V_ICE_AD


stations
Akima spline for
COSMO area, 7km
satellite, 4km
vegetation

Station Dmitrov. 9.11.2011-31.01.2012



Valday observations Meteostation

- Surface pressure, T2m temperature and humidity, precipitation- measurement frequency 3h

- SW and LW radiation, radiative balance - measurement frequency 3h

- AWS-continuous measurement (data-logger)

Valday observations

Polygon for precipitation measurements

- WMO standard gauge. Wind protection for better measurement quality

- Pan evaporation
- Half-day precipitation (summer) and daily (winter)

Valday observations
Mosaic of the boreal landscapes

Forest

Mire

Grassland (PET measurements)

Precipitaion (above and under the canopy) – daily (summer), 5-day (winter)

Evapotranspiration (once in 5 days)

Snow water equvivalent

Freezing and thawing depth (once in 5 days)

Valday observations
Hydrological measurements in lake

- Temperature profiles

- River and stream runoff (9 sites), maximum snow depth

Planned timeline for Valdai data transfer to SRNWP Data Exchange Programme

- May 2012 – standard meteorological observations for 2011
- September 2012- evapotranspiration, snow depth (spatially distributed) , freezing and thawing depth for the forested watershed
- More climate data could be digitized on demand

Thank you for your attention!