

Representativeness at Sodankyla

Jonny Day

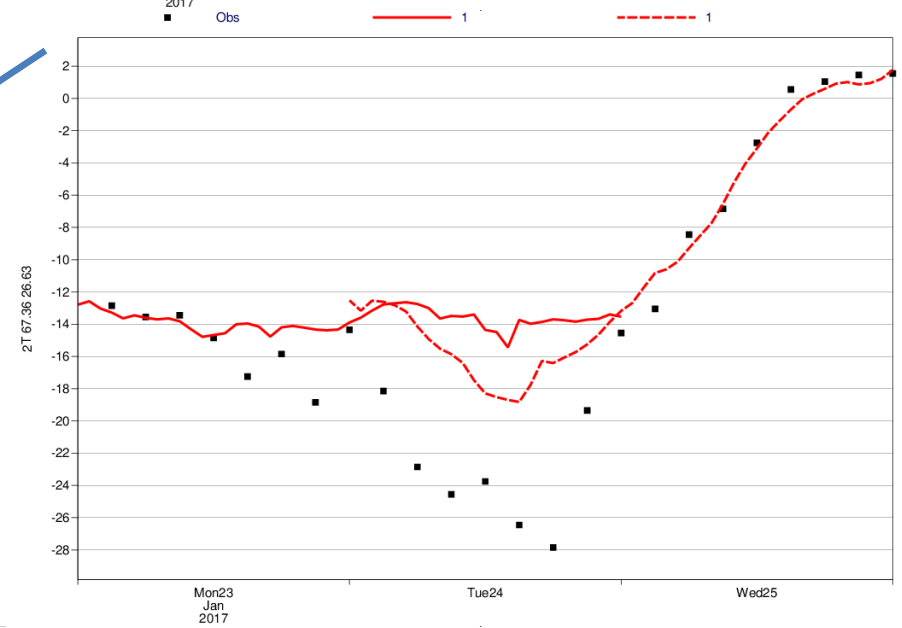
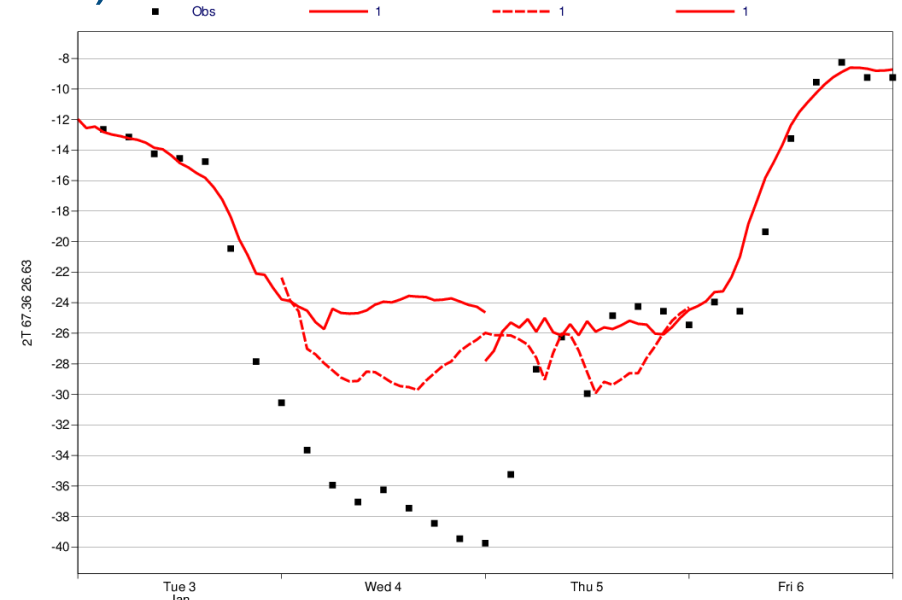
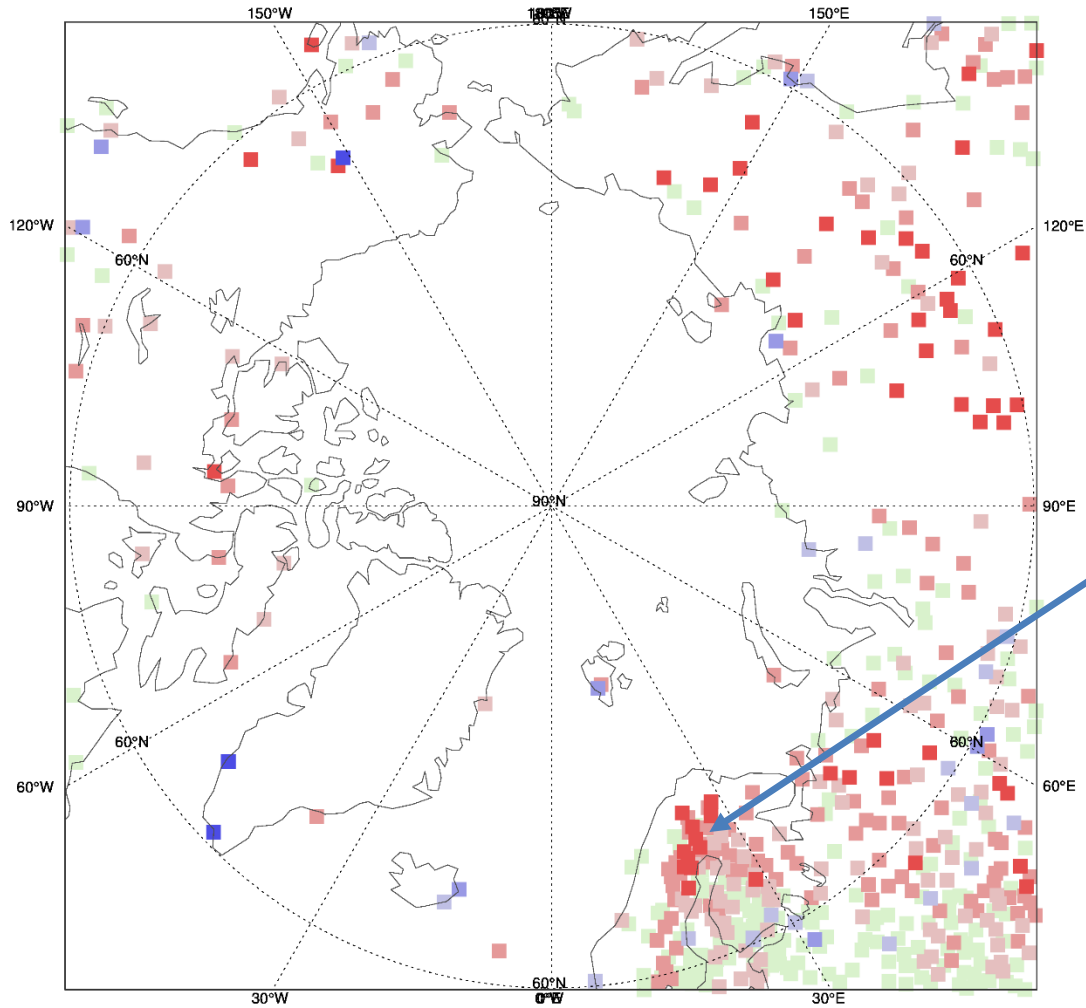
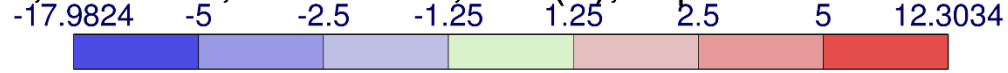
j.day@ecmwf.int



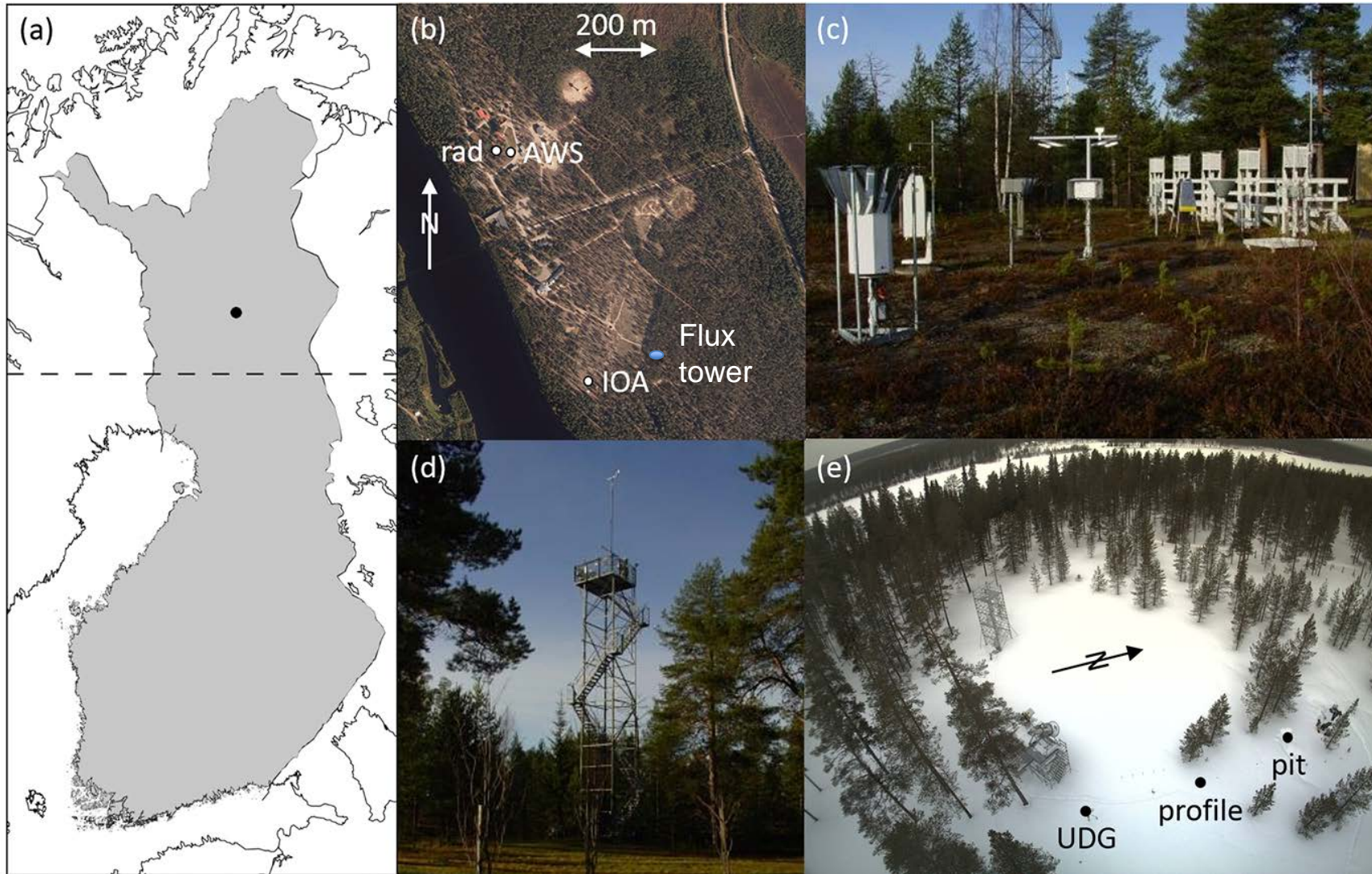
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IFS warm bias at Sodankylä (DJFM 2016/17)

TMIN, RUN=00, STEP=048, ME (K), expv=1



Sodankylä site map



Sodankylä meteorological mast

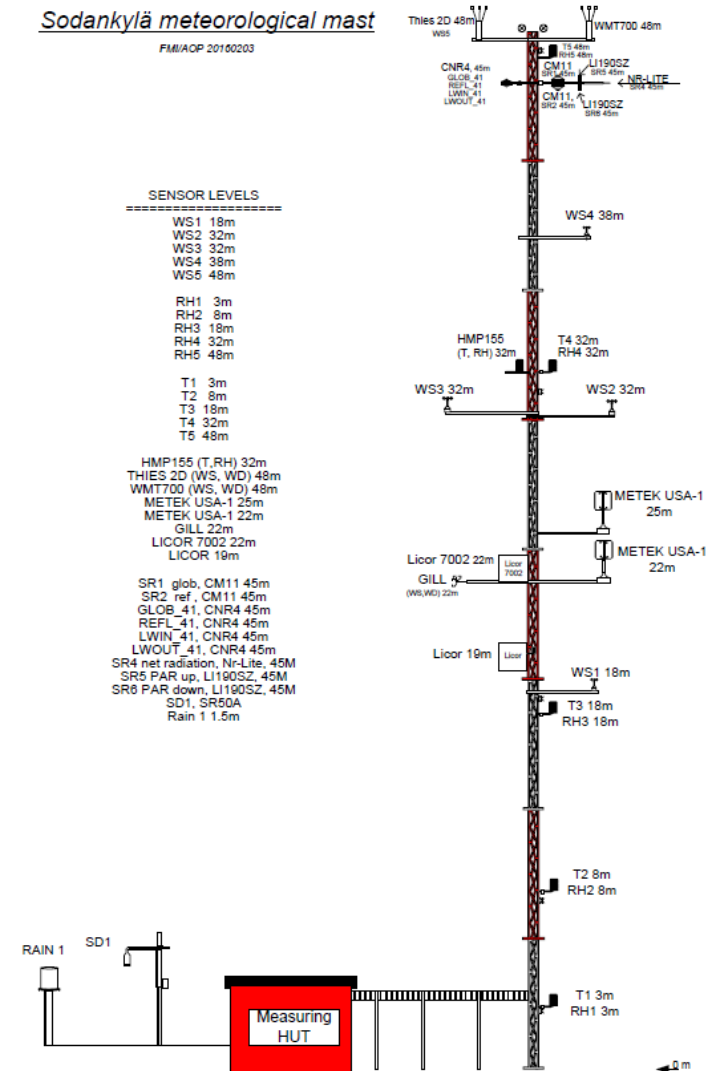
FM/AOP 20100203

SENSOR LEVELS

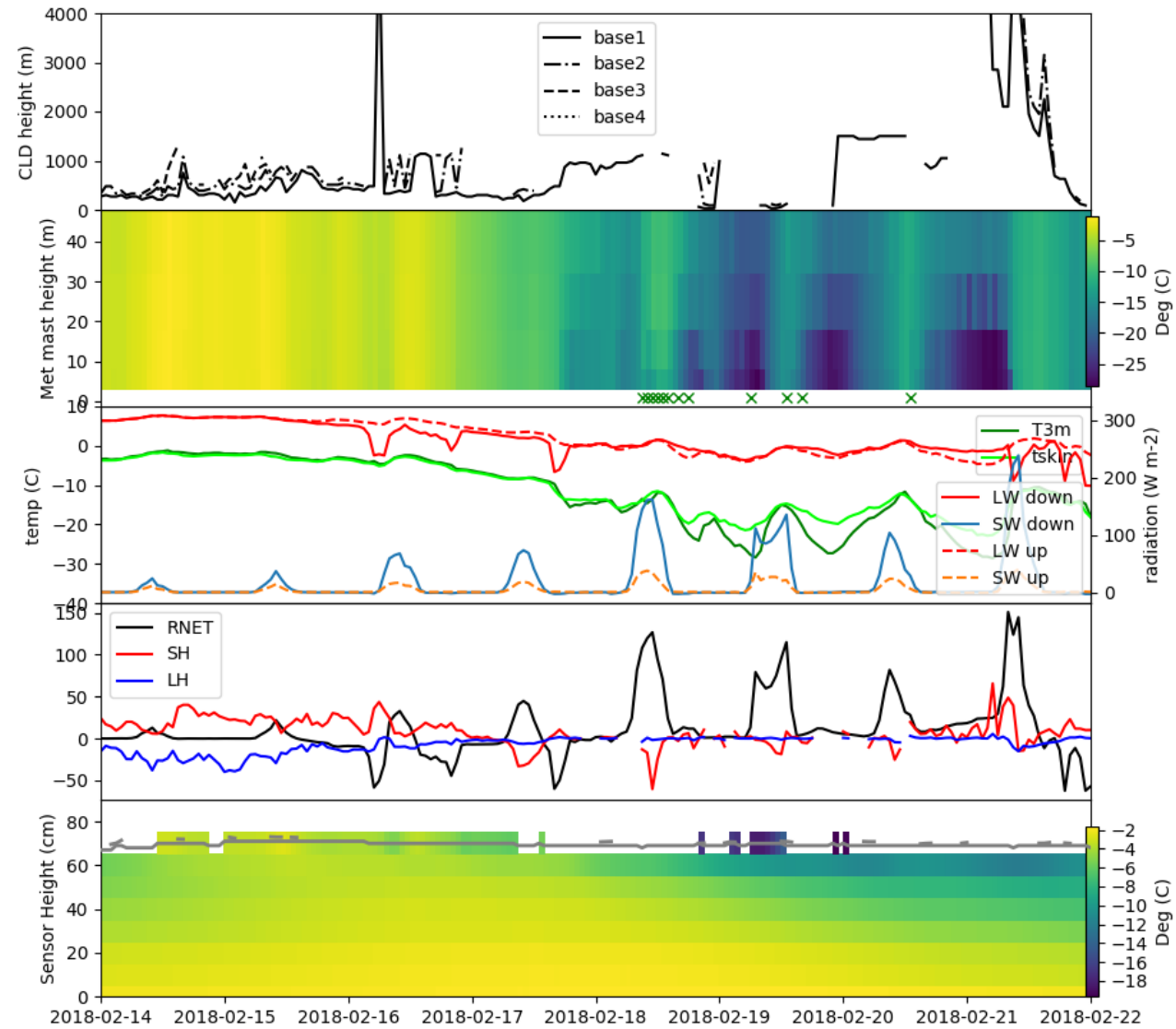
- WS1 18m
- WS2 32m
- WS3 32m
- WS4 38m
- WS5 48m
- RH1 3m
- RH2 8m
- RH3 18m
- RH4 32m
- RH5 48m
- T1 3m
- T2 8m
- T3 18m
- T4 32m
- T5 48m

- HMP155 (T, RH) 32m
- THIES 2D (WS, WD) 48m
- WMT700 (WS, WD) 48m
- METEK USA-1 25m
- METEK USA-1 22m
- GILL 22m
- LICOR 7002 22m
- LICOR 19m

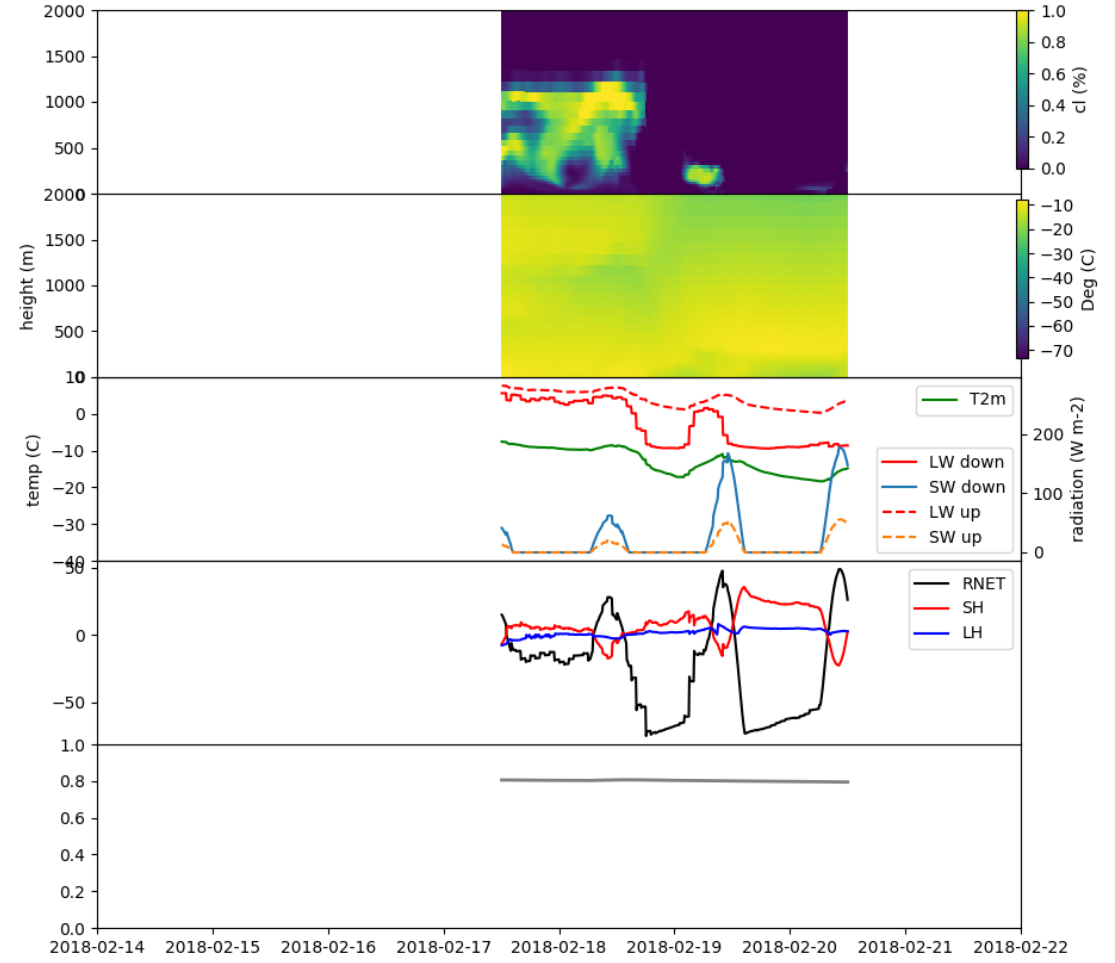
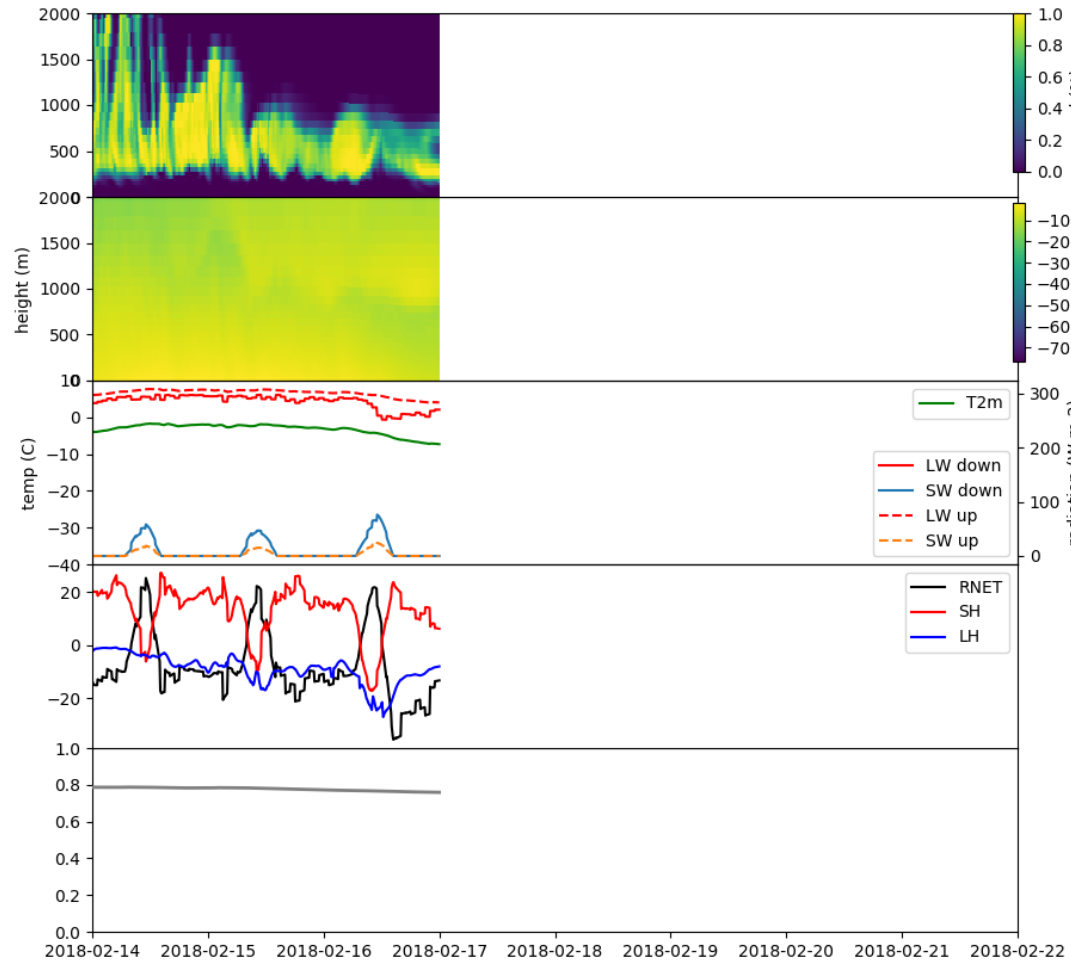
- SR1 glob, CM11 45m
- SR2 ref, CM11 45m
- GLOB_41, CNR4 45m
- REFL_41, CNR4 45m
- LWIN_41, CNR4 45m
- LWOUT_41, CNR4 45m
- SR4 net radiation, Nr-Lite, 45M
- SR5 PAR up, LI190SZ, 45M
- SR6 PAR down, LI190SZ, 45M
- SD1, SR50A
- Rain 1 1.5m



Transition Case Study



Forecast



ECMWF YOPPsiteMIP file example

```
<xarray.Dataset>
Dimensions:   (half_level: 138, lat: 1, level: 137, lon: 1, slevel: 4, tiles: 9, time: 576)
Coordinates:
  * lat       (lat) float64 67.38
  * lon       (lon) float64 26.5
  * time      (time) datetime64[ns] 2018-03-02T00:07:30 2018-03-02T00:15:00 ...
  * slevel    (slevel) float64 0.035 0.175 0.64 1.945
Dimensions without coordinates: half_level, level, tiles
Data variables:
  zg          (time, lat, lon, level) float64 ...
  zghalf     (time, lat, lon, half_level) float64 ...
  pfull      (time, lat, lon, level) float64 ...
  phalf      (time, lat, lon, half_level) float64 ...
  ta         (time, lat, lon, level) float64 ...
  ua         (time, lat, lon, level) float64 ...
  va         (time, lat, lon, level) float64 ...
  hus        (time, lat, lon, level) float64 ...
  hur        (time, lat, lon, level) float64 ...
  cl         (time, lat, lon, level) float64 ...
  clw        (time, lat, lon, level) float64 ...
  cli        (time, lat, lon, level) float64 ...
  wap        (time, lat, lon, level) float64 ...
  snow       (time, lat, lon, level) float64 ...
  rain       (time, lat, lon, level) float64 ...
  tnt        (time, lat, lon, level) float64 ...
  tnhus      (time, lat, lon, level) float64 ...
  tnmmvtot   (time, lat, lon, level) float64 ...
  tnmmvtot   (time, lat, lon, level) float64 ...
  uw         (time, lat, lon, half_level) float64 ...
  vw         (time, lat, lon, half_level) float64 ...
  tauu       (time, lat, lon) float64 ...
  tauv       (time, lat, lon) float64 ...
  orog       (time, lat, lon) float64 ...
  ps         (time, lat, lon) float64 ...
  rsds       (time, lat, lon) float64 ...
  rlds       (time, lat, lon) float64 ...
  rsus       (time, lat, lon) float64 ...
  rlus       (time, lat, lon) float64 ...
  hfsl       (time, lat, lon) float64 ...
  hfss       (time, lat, lon) float64 ...
  rlut       (time, lat, lon) float64 ...
  rsdt       (time, lat, lon) float64 ...
  rsut       (time, lat, lon) float64 ...
  pr         (time, lat, lon) float64 ...
  prsn       (time, lat, lon) float64 ...
  clt        (time, lat, lon) float64 ...
  zmla       (time, lat, lon) float64 ...
  tas        (time, lat, lon) float64 ...
  huss       (time, lat, lon) float64 ...
  uas        (time, lat, lon) float64 ...
  vas        (time, lat, lon) float64 ...
  ts         (time, lat, lon) float64 ...
  tsn        (time, lat, lon) float64 ...
  snd        (time, lat, lon) float64 ...
```