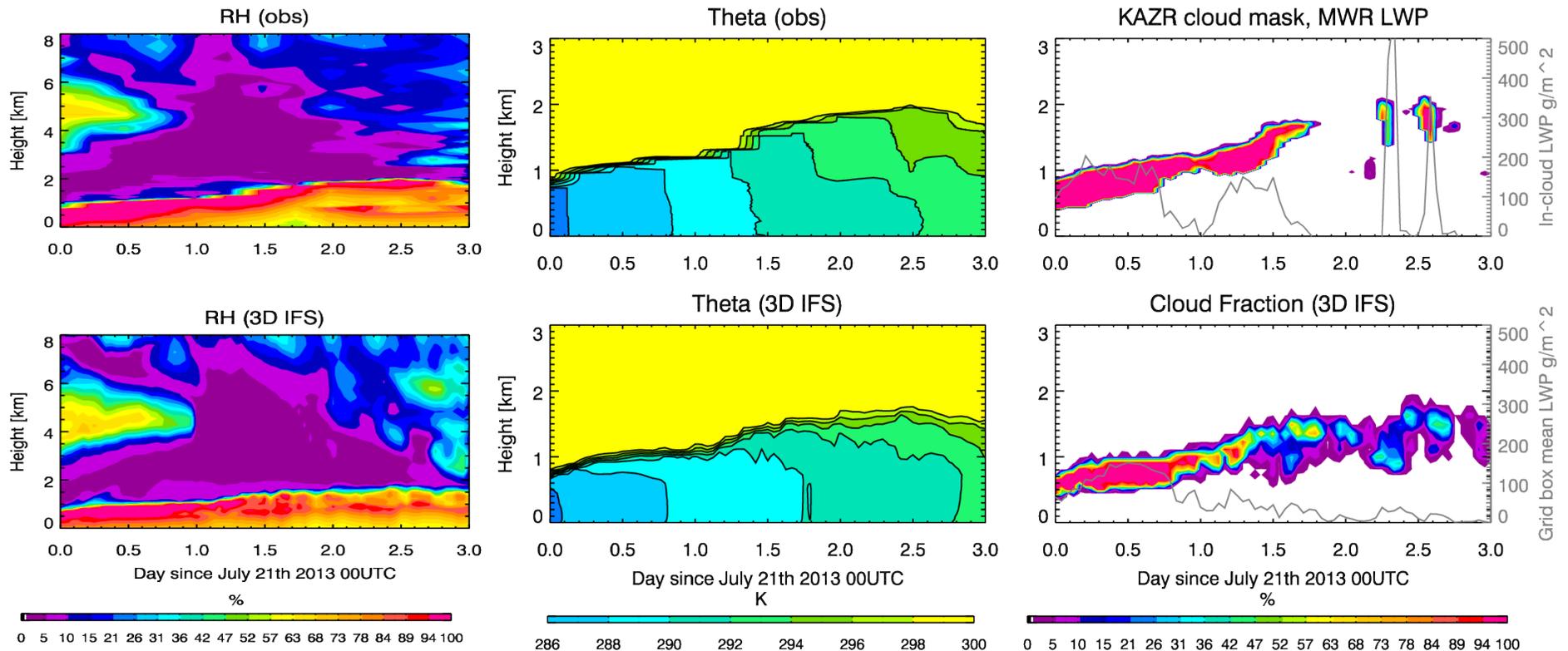


# Ship-following SCM forcing for MAGIC leg 15A

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ASR meeting, May 2016

# The case: Cloud breakup along MAGIC Leg 15A

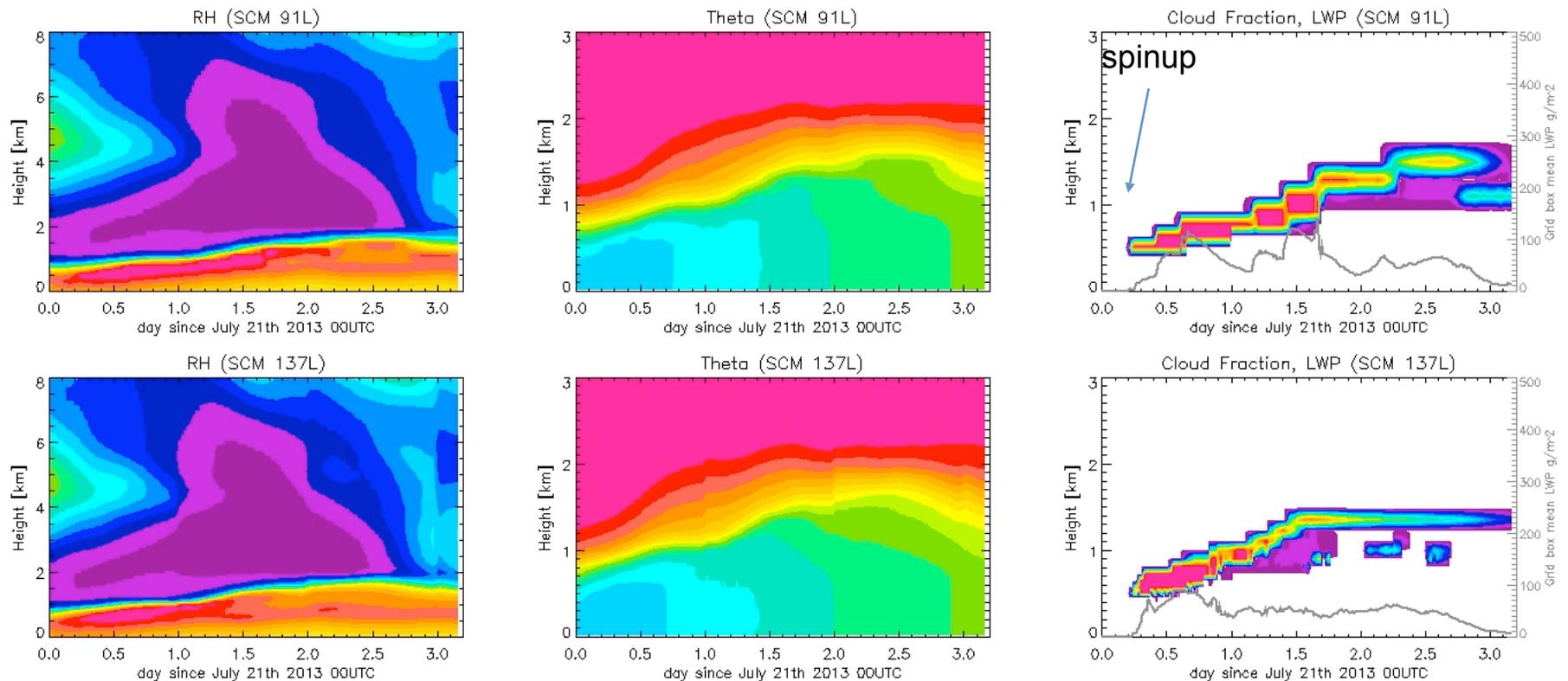
Quick look at model performance (operational ECMWF model) for the case: Short-term forecast from IFS captures RH structure above BL well, but details of the BL and transition (decoupling, cloud top height, LWP) could be better



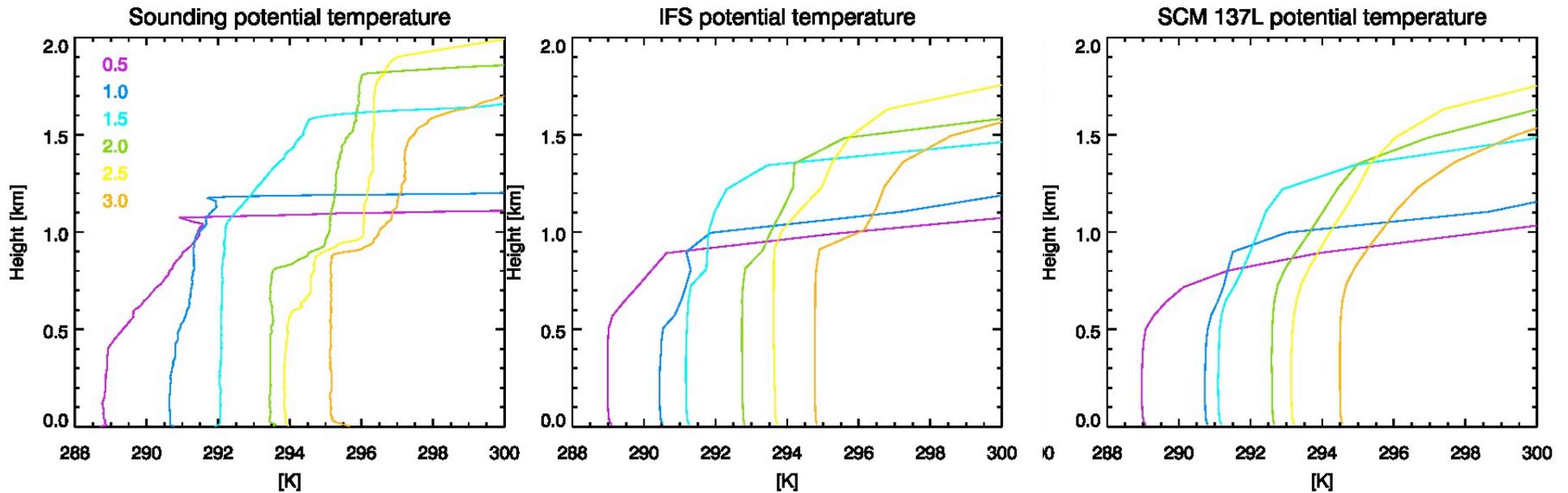
# Ship-following SCM forcing available (courtesy of Jeremy McGibbon and Chris Bretherton)

Jeremy created ship-following LES forcing from gridded IFS operational forecasts. This forcing has been adapted for use with SCM.

Examples below: IFS SCM experiments with two different vertical resolutions (91 and 137 levels)



# SCM shows similar weaknesses as full 3D model



Cloud tops too shallow, decoupling not quite right

## What can this case do?

- The forcing for the case seems to work well (at least for the IFS SCM)
- It leads to SCM simulations that are comparable to the operational model output, with similar weaknesses in the BL structure
- The modelled clouds are similar enough to the observations that a direct comparison with observations should be appropriate (I say “should”, because I haven’t yet had a chance to take a closer look at the observations.)
- Jeremy’s LES case could provide a valuable validated benchmark to compare against. (Not sure how far along he is with publishing his results.)
- I’m happy to share the SCM forcing (in netcdf file format) with anyone interested

### Questions from me:

- What is the status of “modeller-friendly” data products for this leg (or MAGIC in general)? In particular, cloud property retrievals (water content, Reff).
- Is there a place in the MAGIC campaign archive where the SCM forcing could/should be saved, for direct access?