

Airborne Doppler Radar Data Assimilation Retrospective

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A conference call was held 07 March to coordinate activities concerning Airborne Doppler Radar assimilation into regional models. The main goal is to get a good assessment of the impact of the Doppler Radar data on the guidance before the coming season.

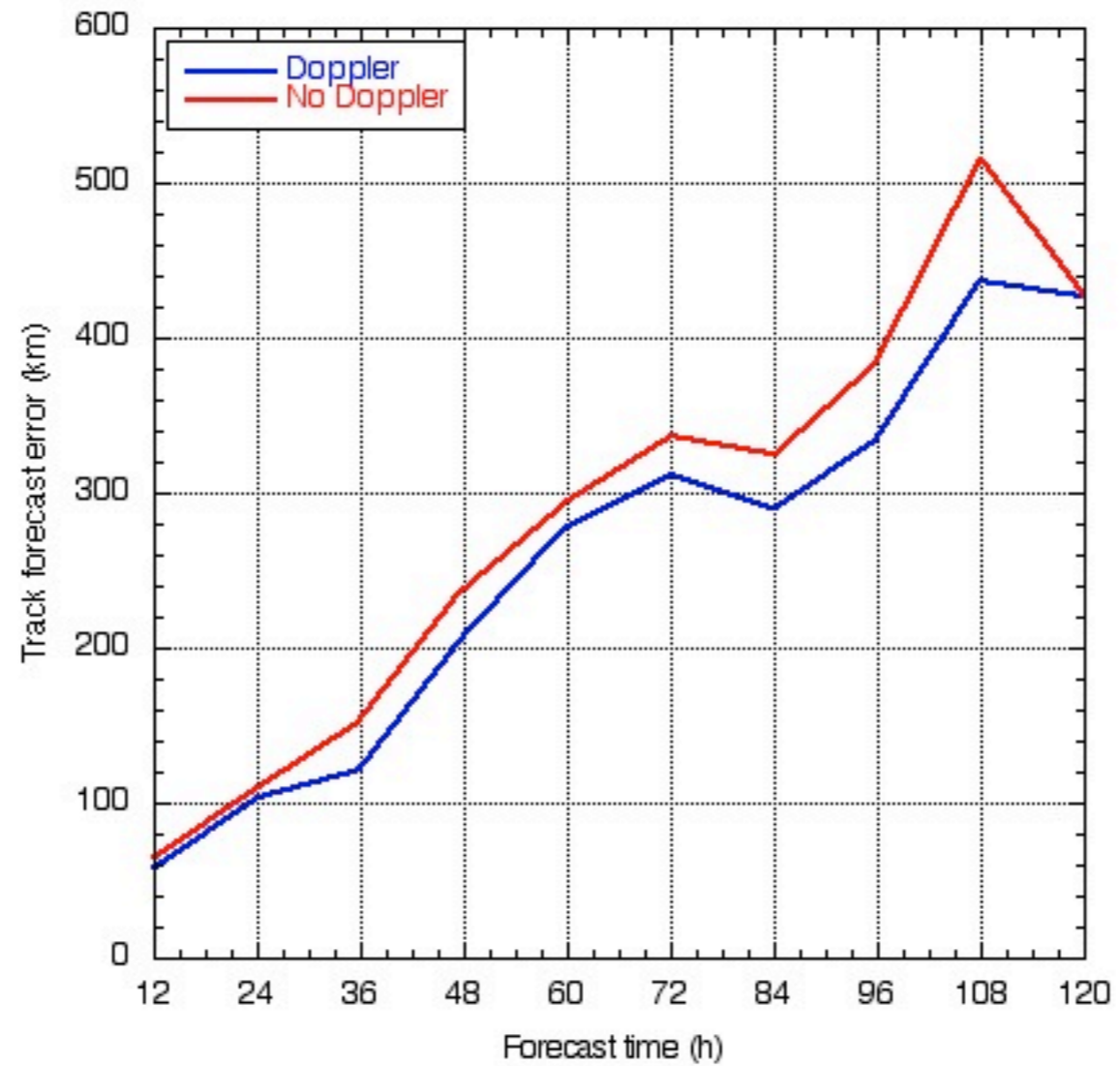
The Penn State group has gotten impressive improvements to models from assimilation of the Doppler Radar data from cases in 2008-2010, but less impressive results in 2005-2007 cases.

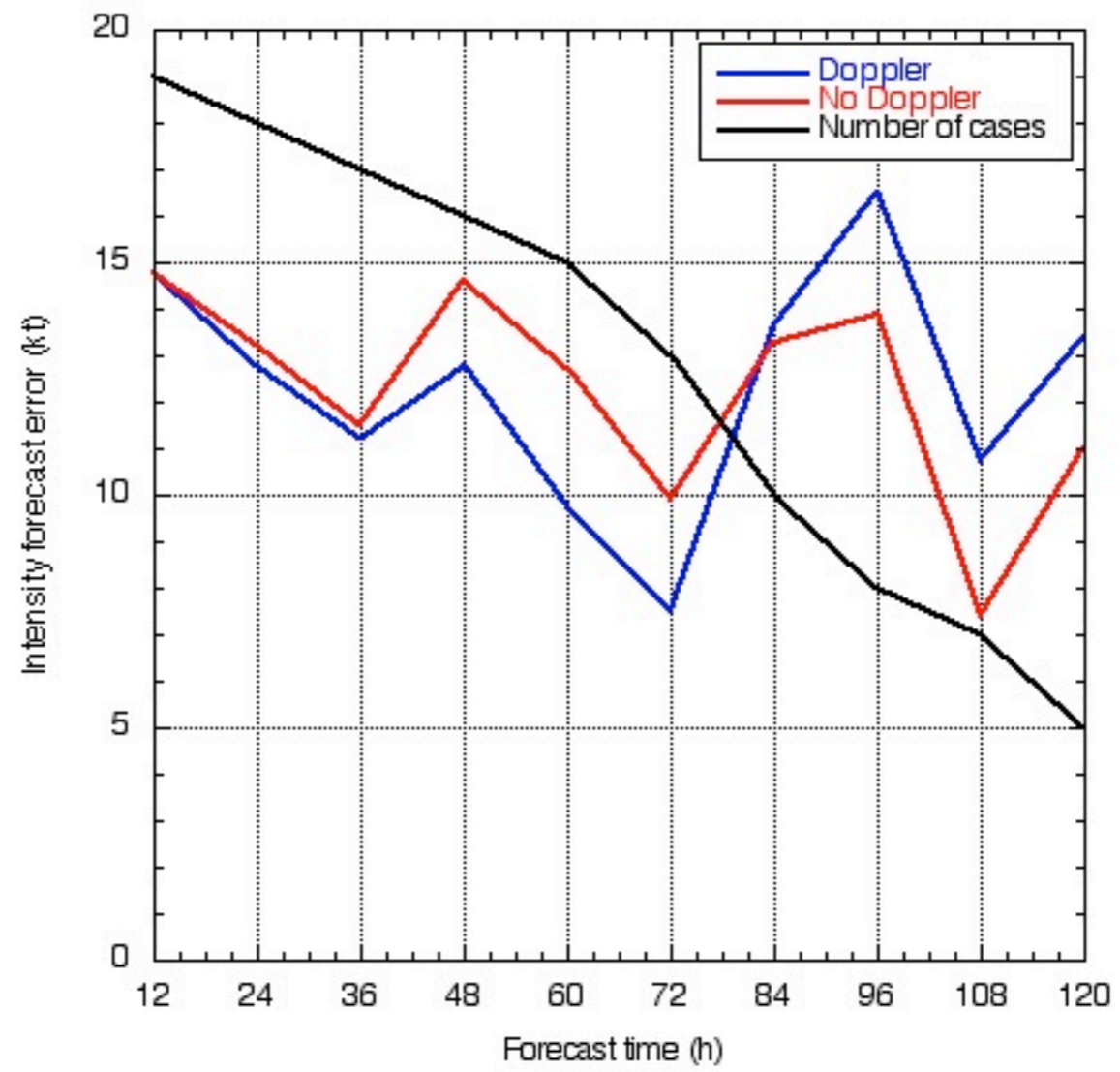
HEDAS has gotten results similar to the Penn State results for the 2010 cases.

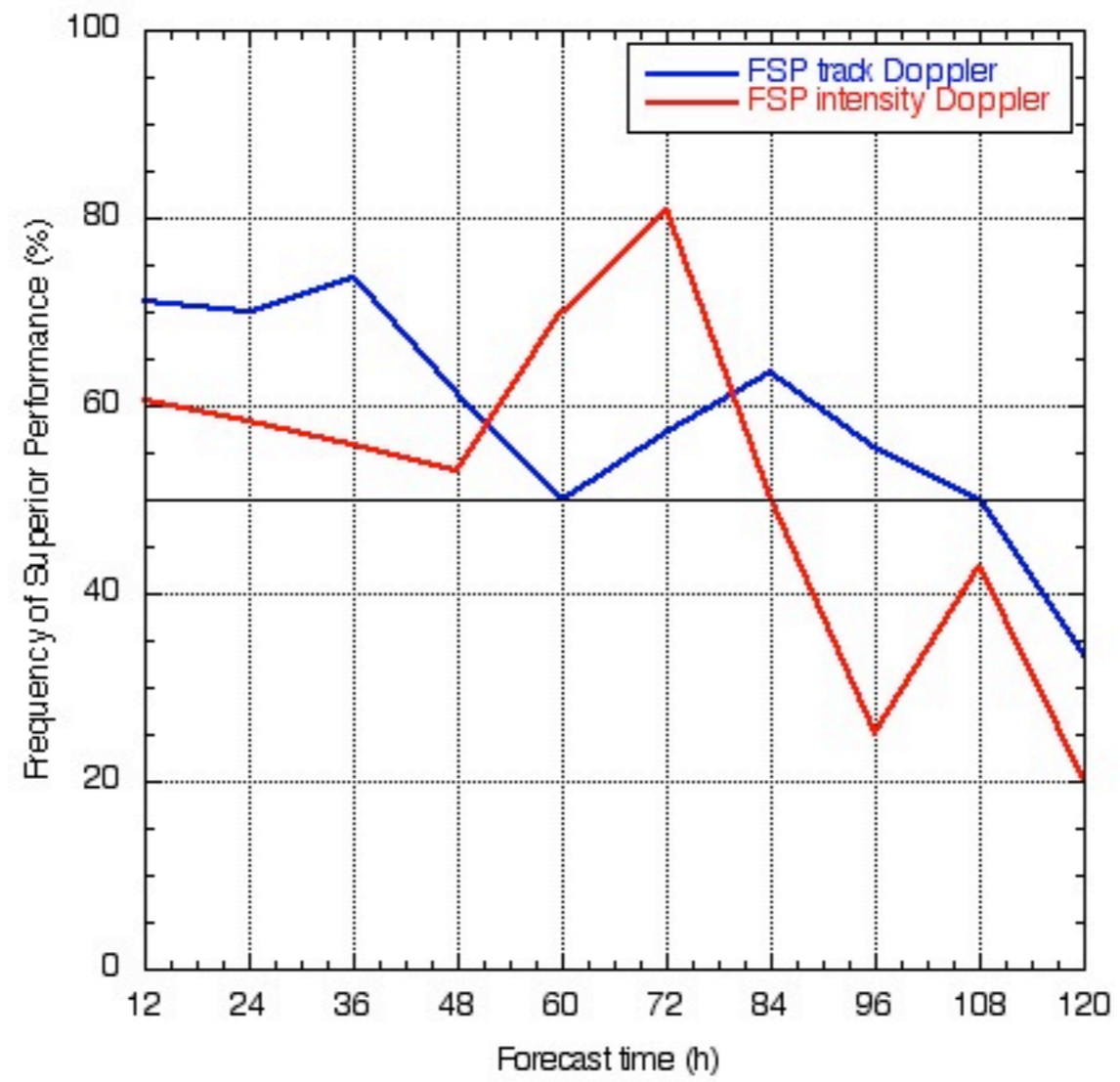
Action Items

1. HEDAS will be run for all available cases in 2008-2010 using the GFS-EnKF model data (as in the 2010 realtime configuration).
 - a. A set of runs using all aircraft data.
 - b. A set of runs using all aircraft data minus Airborne Doppler Data.
2. ESRL will rerun the 2004-2005 seasons with the GFS at T574, so that the Penn State group will have a consistent background for their model.
3. The Penn State group will run their system on all available 2004-2005 cases.

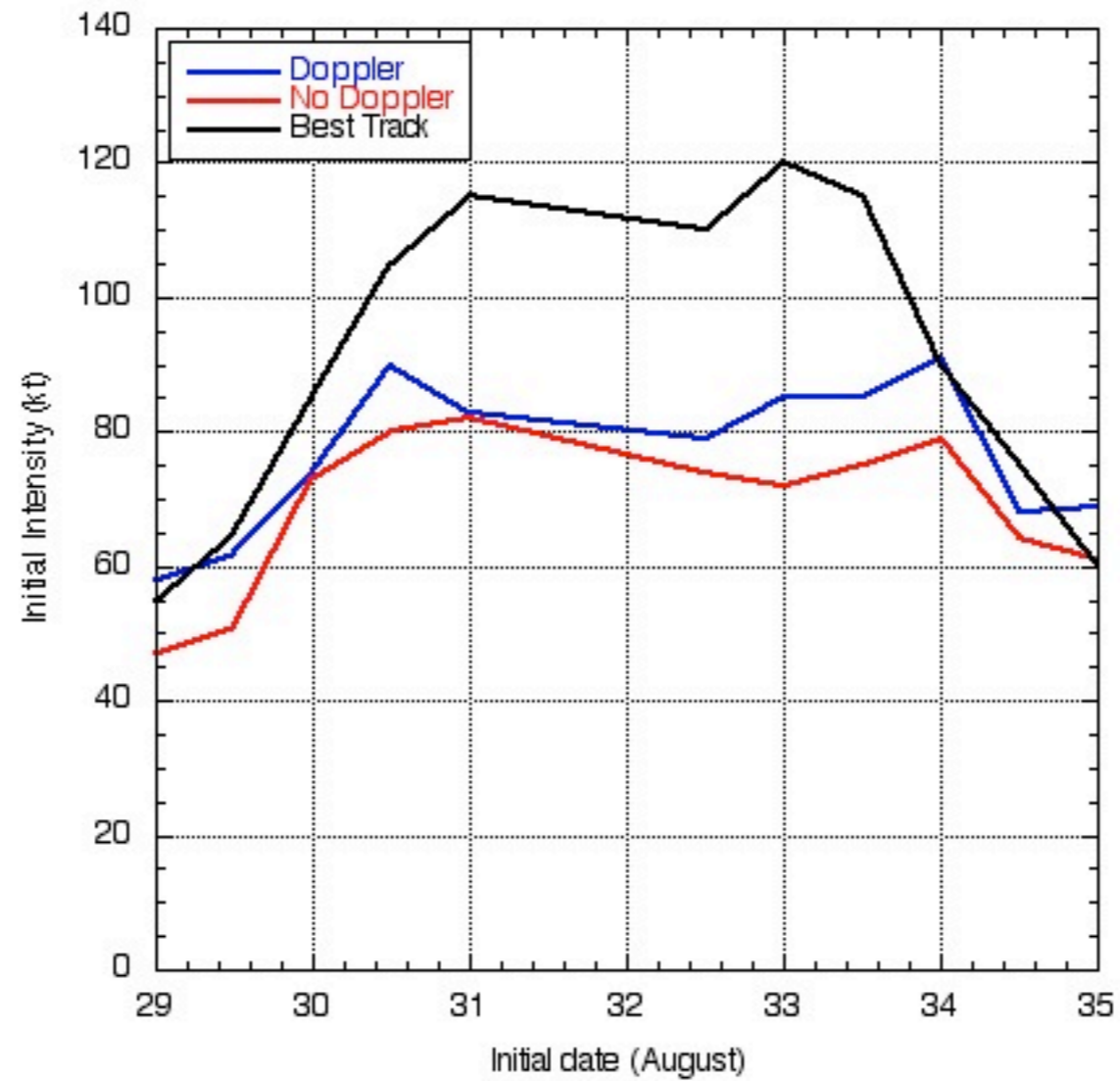
Earl, Karl, Richard, Tomas (so far)





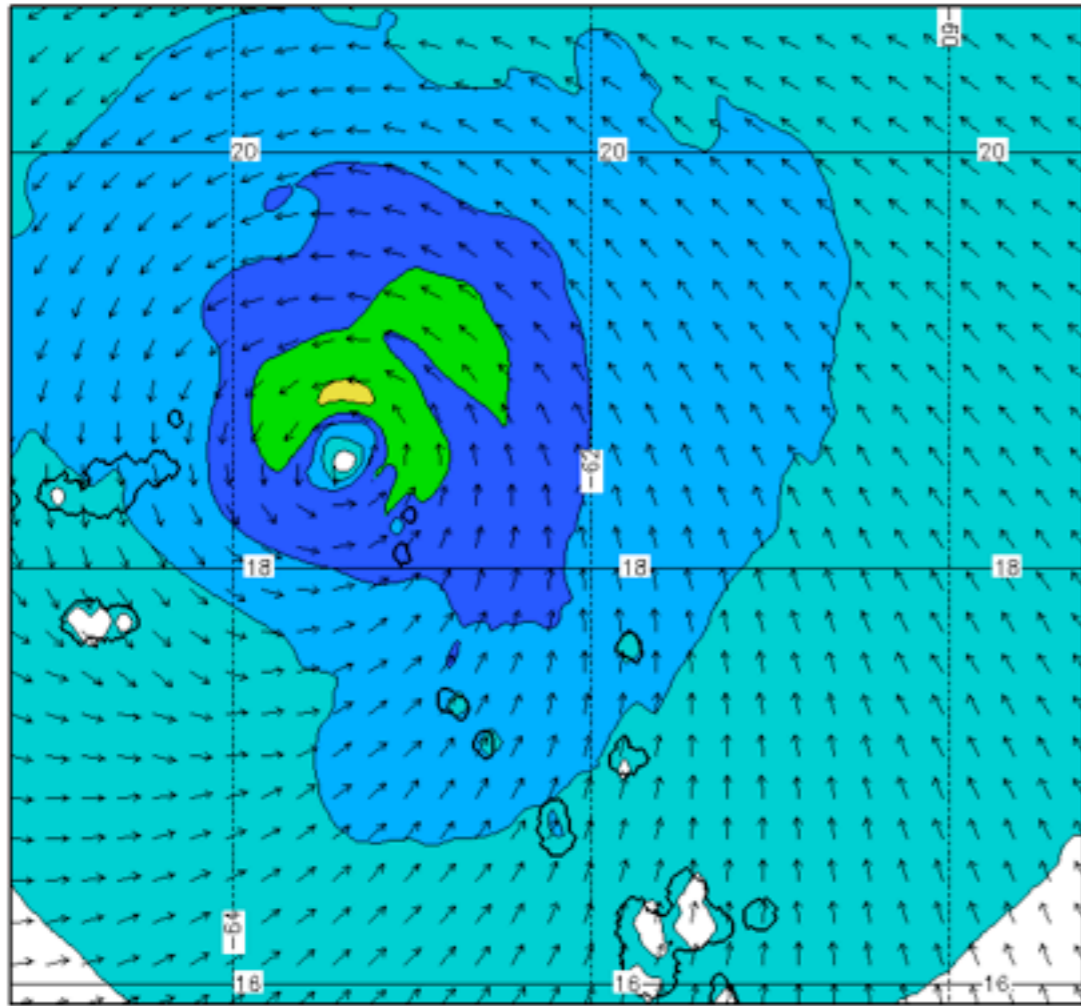


Doppler data improves initial intensity (Earl)



Doppler

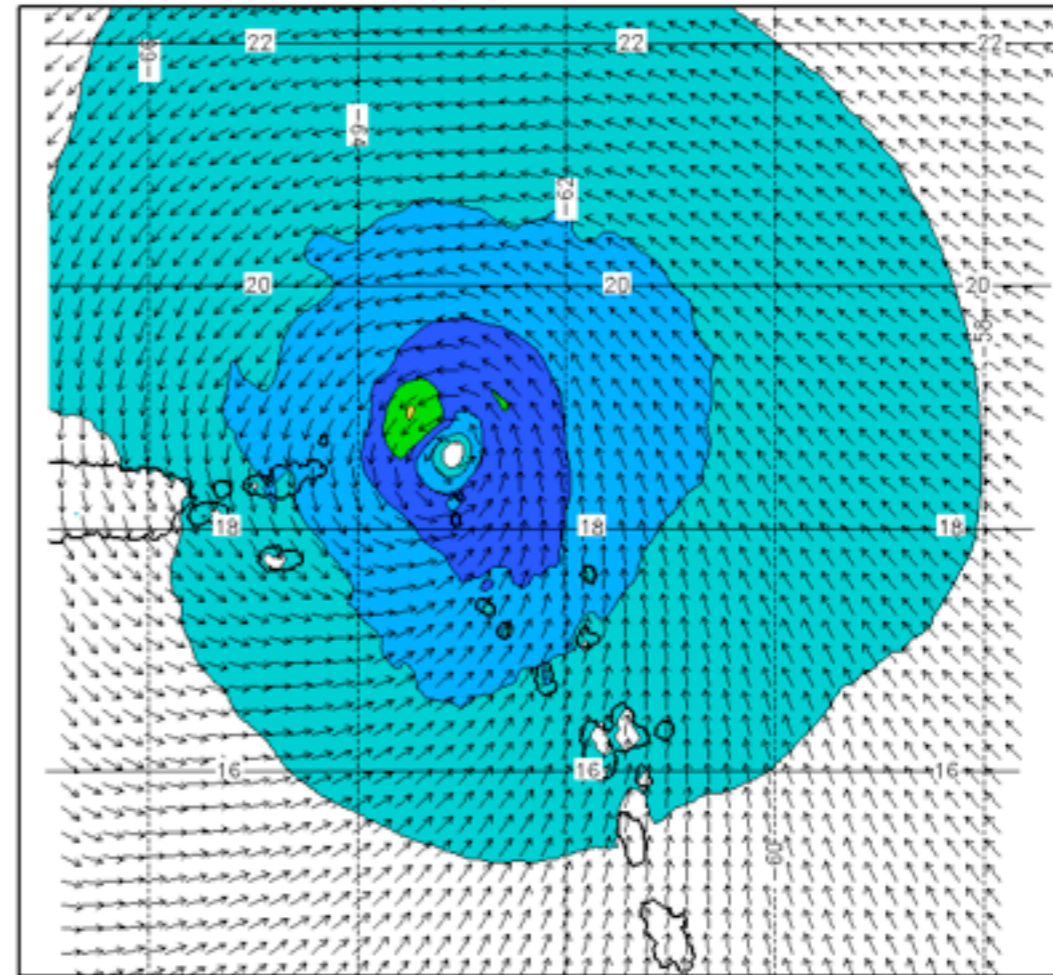
10M wind-speed [kts] 0hr



initial time:2010083012

No Doppler

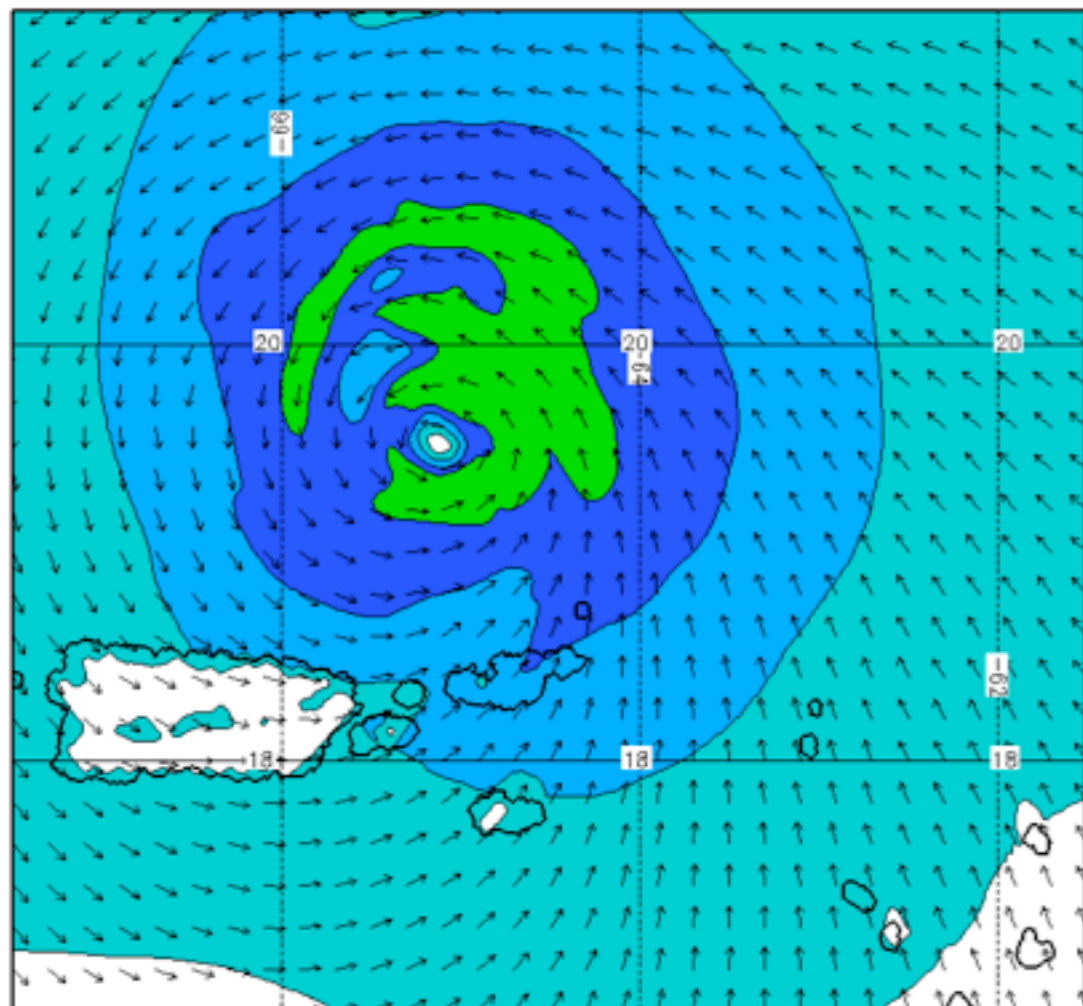
10M wind-speed [kts] 0hr



initial time:2010083012

Doppler

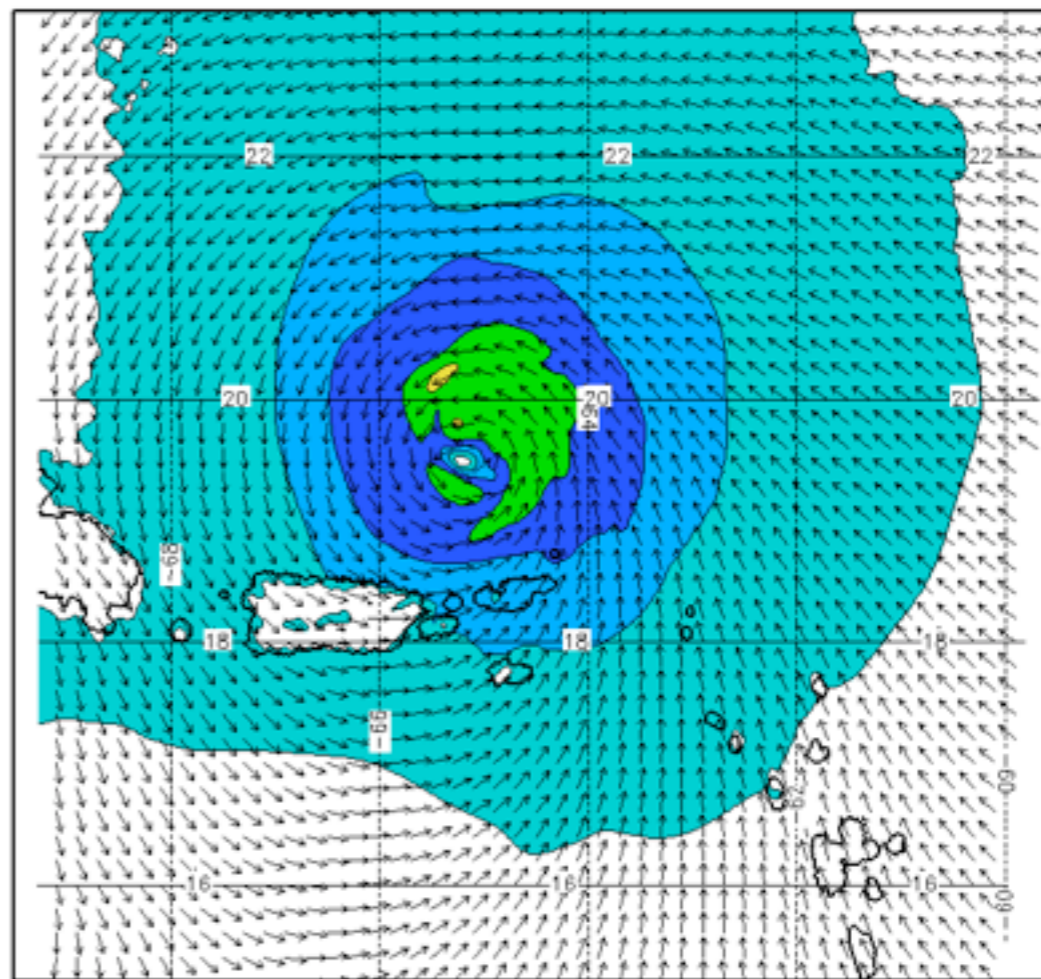
10M wind-speed [kts] 0hr



initial time:2010083100

No Doppler

10M wind-speed [kts] 0hr

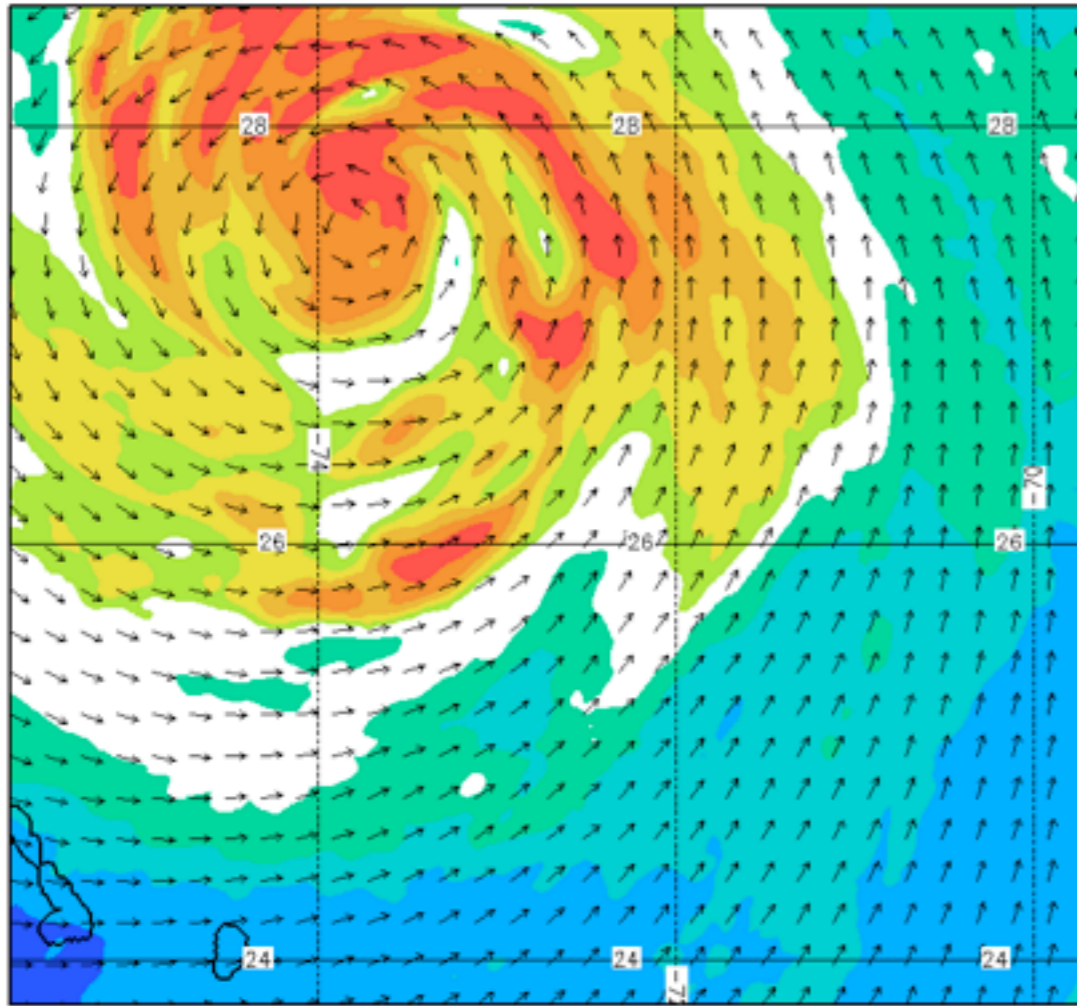


initial time:2010083100

Doppler

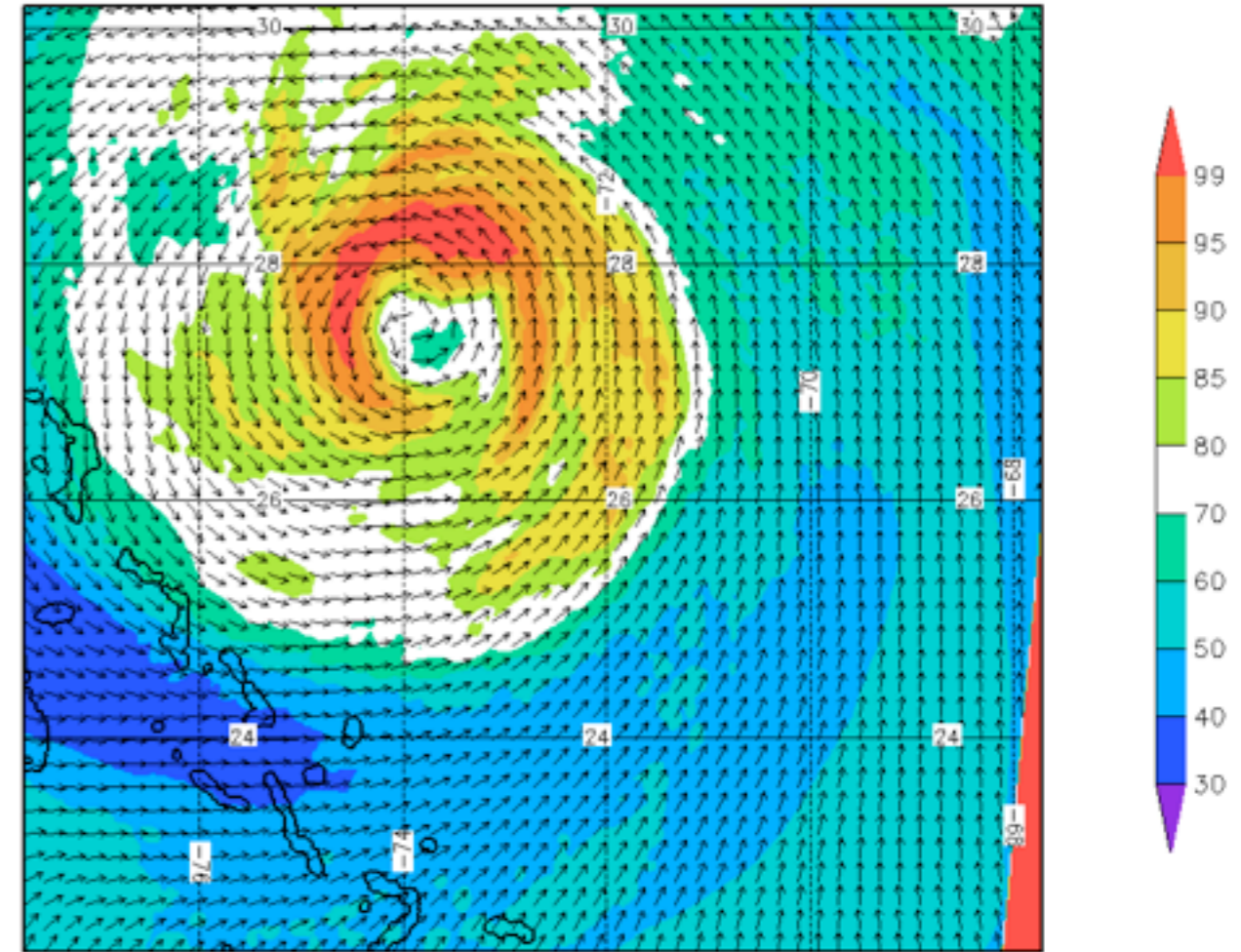
No Doppler

700mb rel humidity [%] for 0hr



initial time:2010090200

700mb rel humidity [%] for 0hr



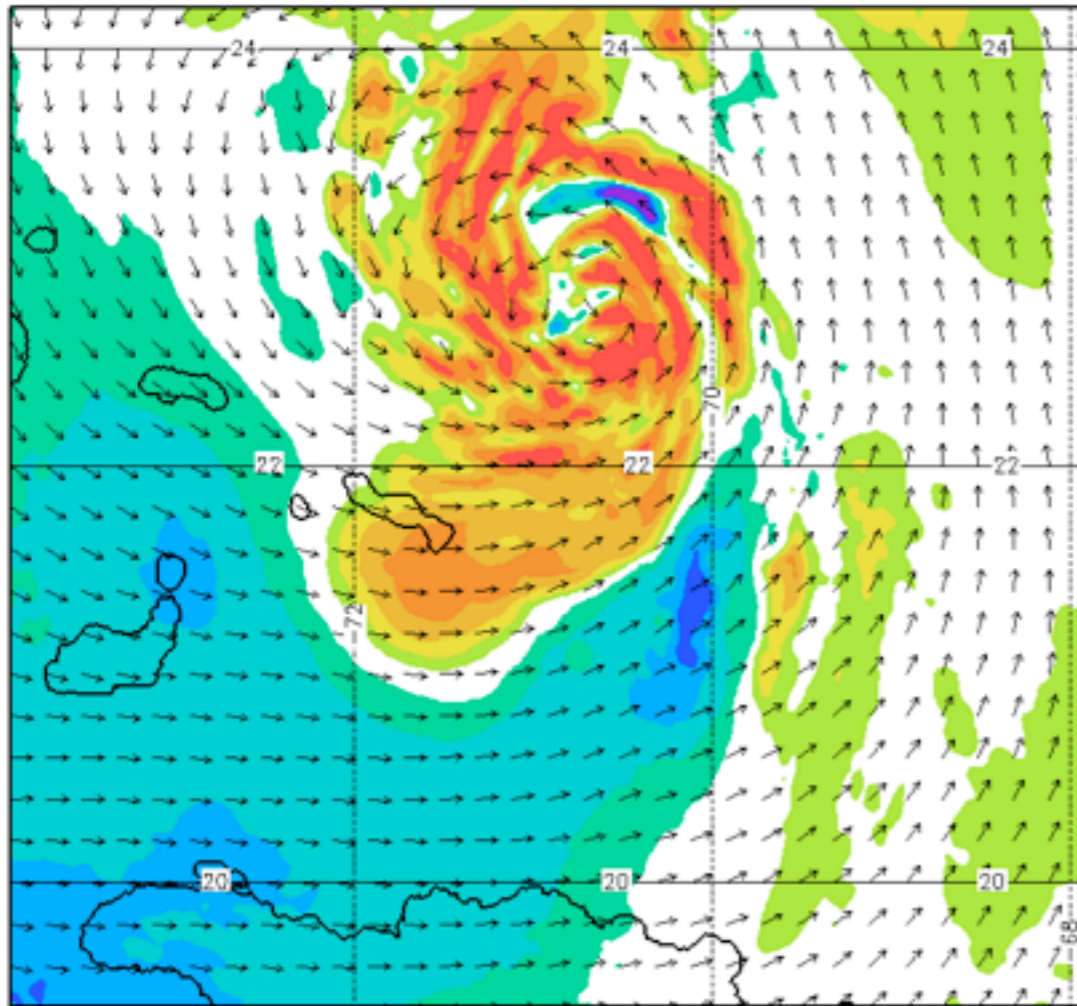
initial time:2010090200

Note the impact of the Doppler winds on humidity!

Doppler

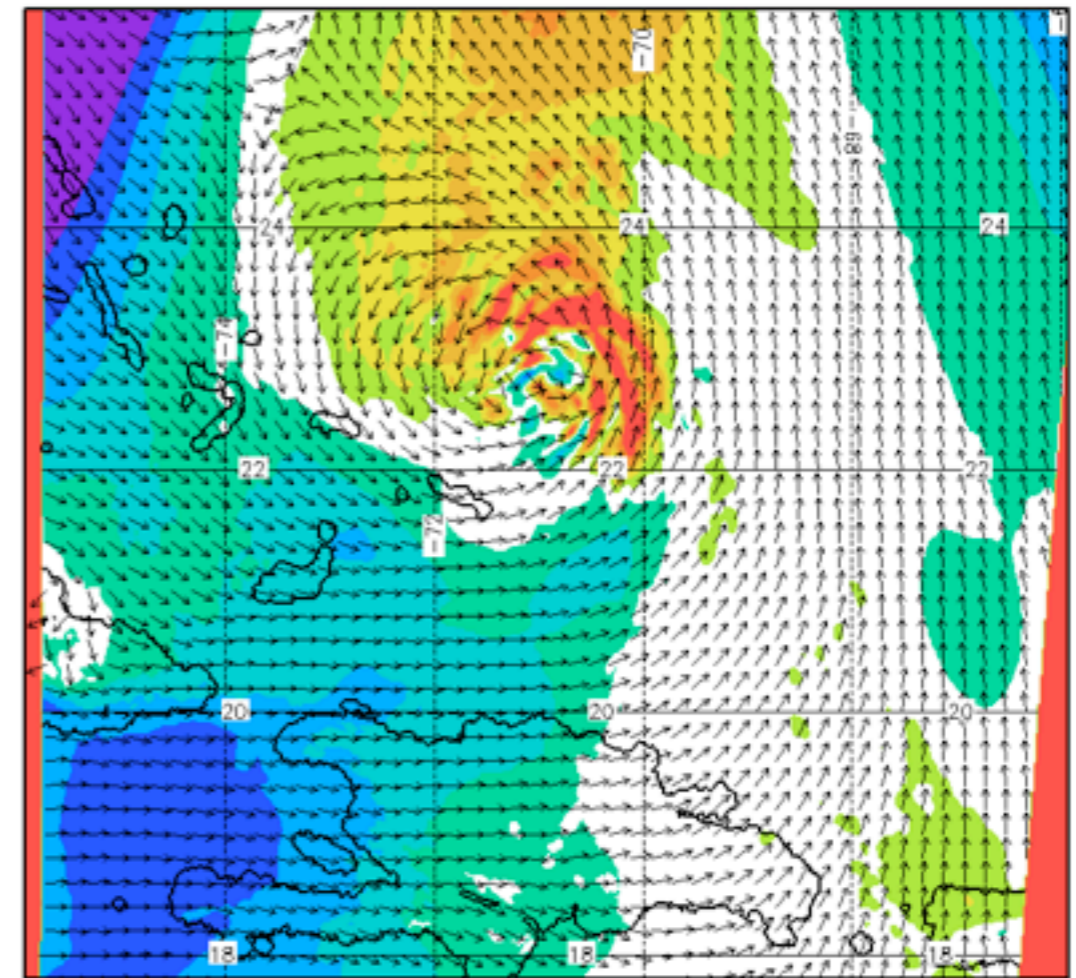
No Doppler

700mb rel humidity [%] for 0hr



initial time:2010110612

700mb rel humidity [%] for 0hr



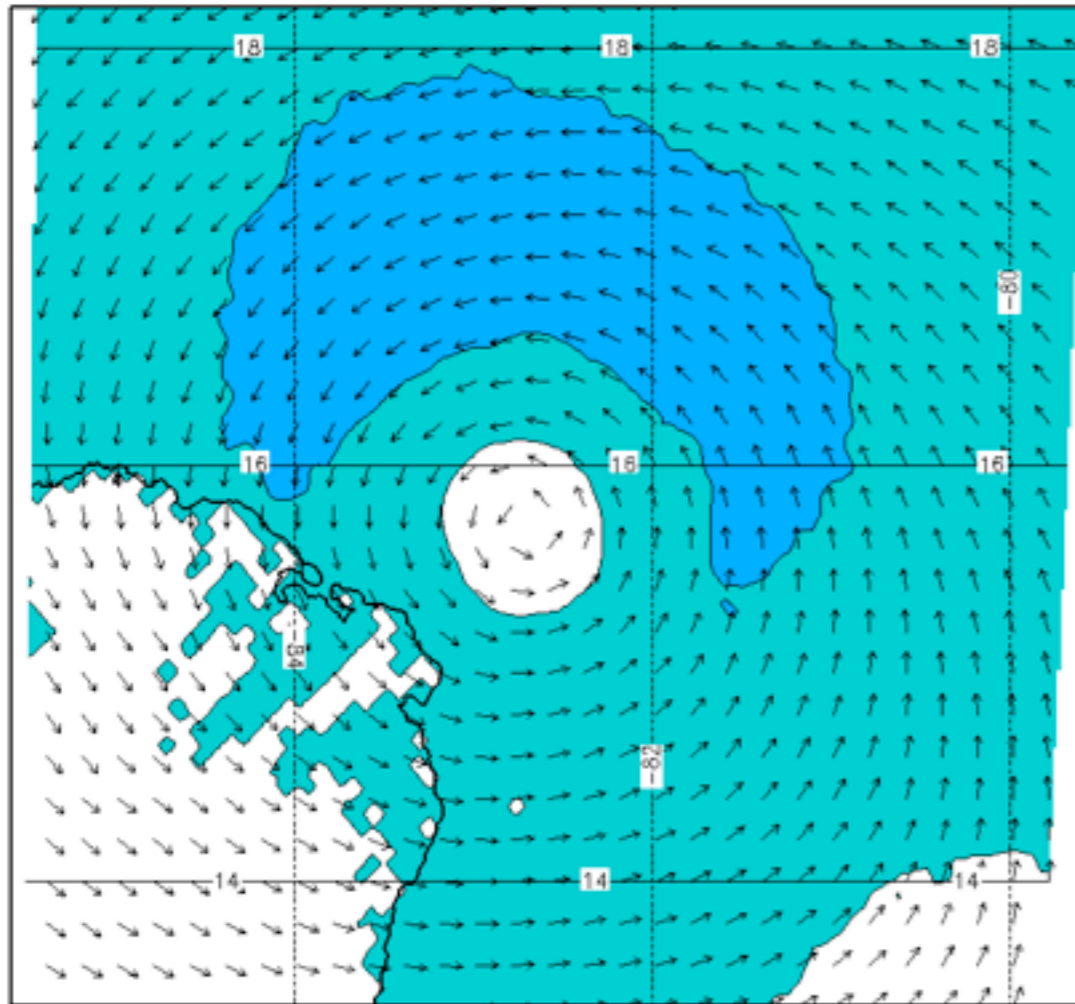
initial time:2010110612

Note the impact of the Doppler winds on humidity!

Doppler

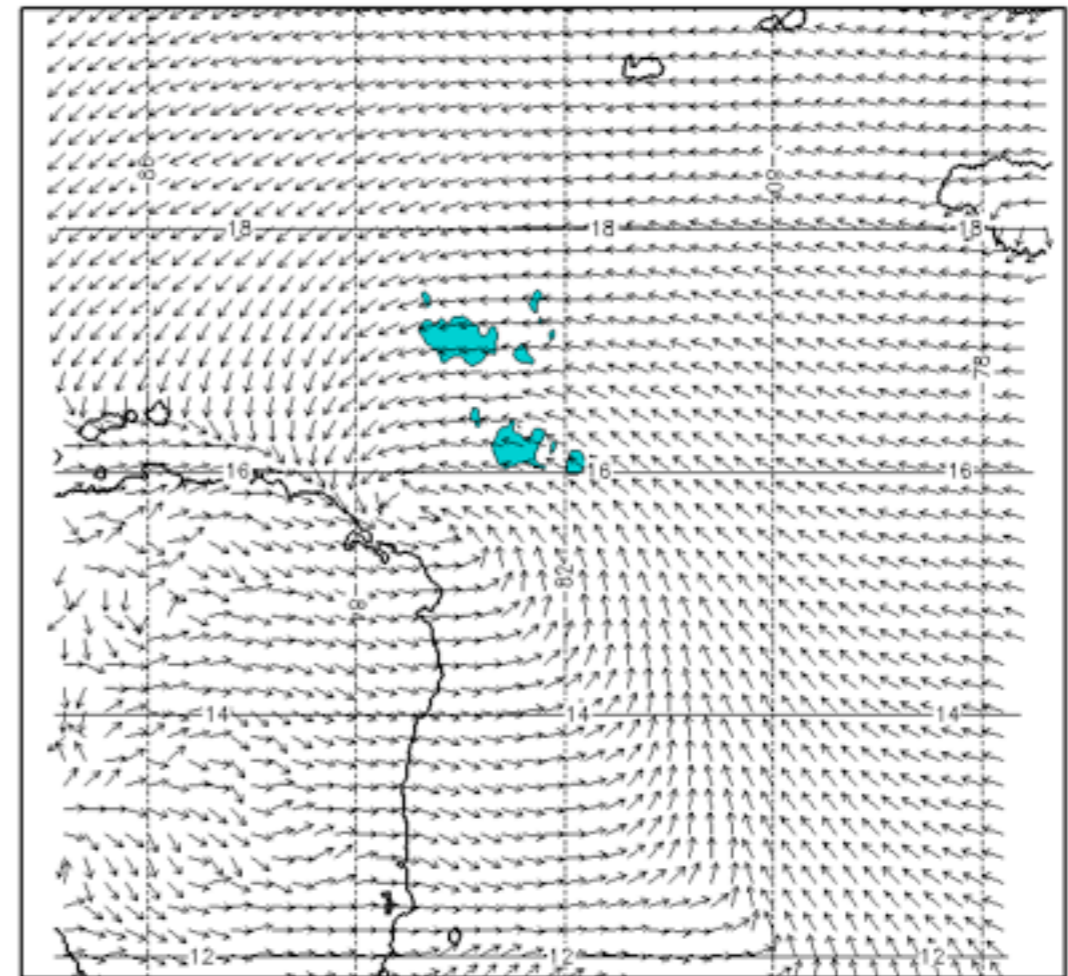
No Doppler

10M wind-speed [kts] 0hr



initial time:2010102306

10M wind-speed [kts] 0hr



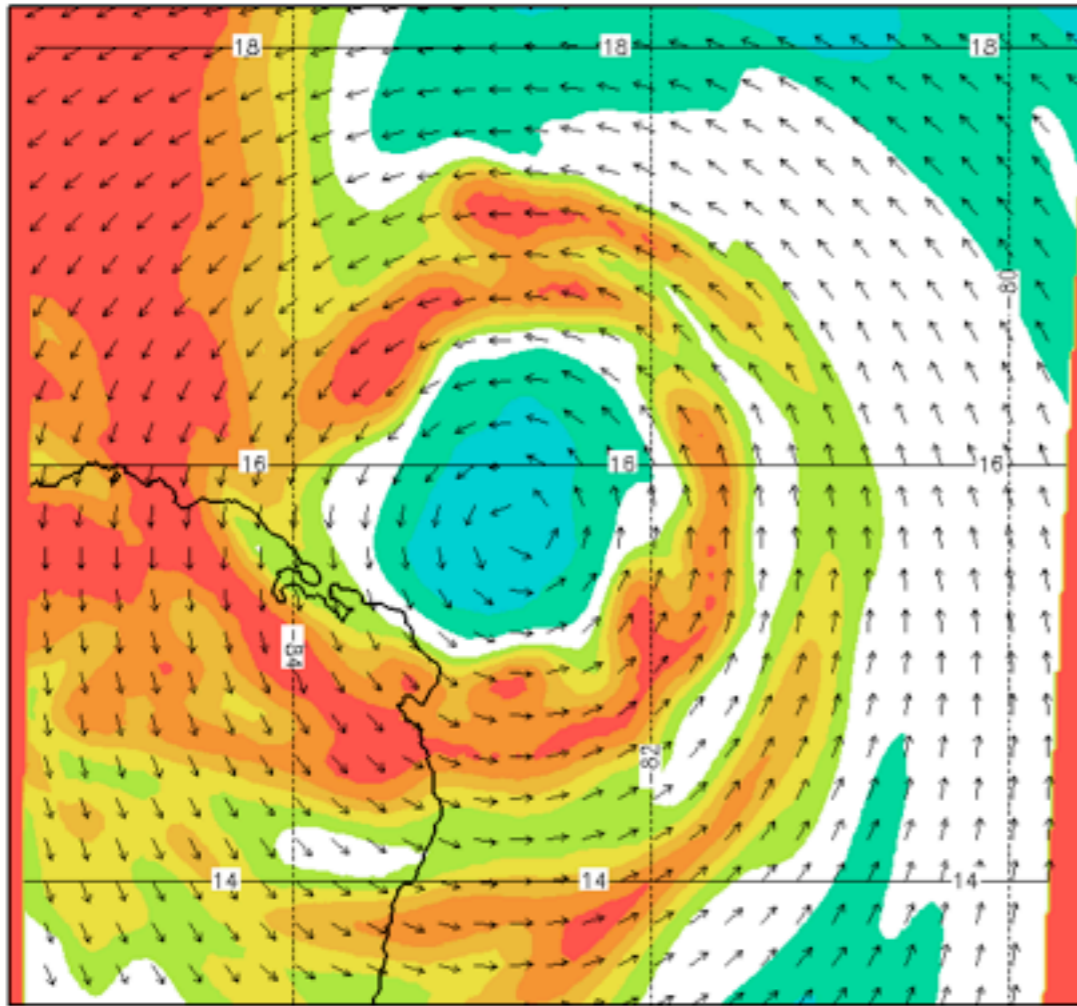
initial time:2010102306

The plane did not get close to the center due to land.

Doppler

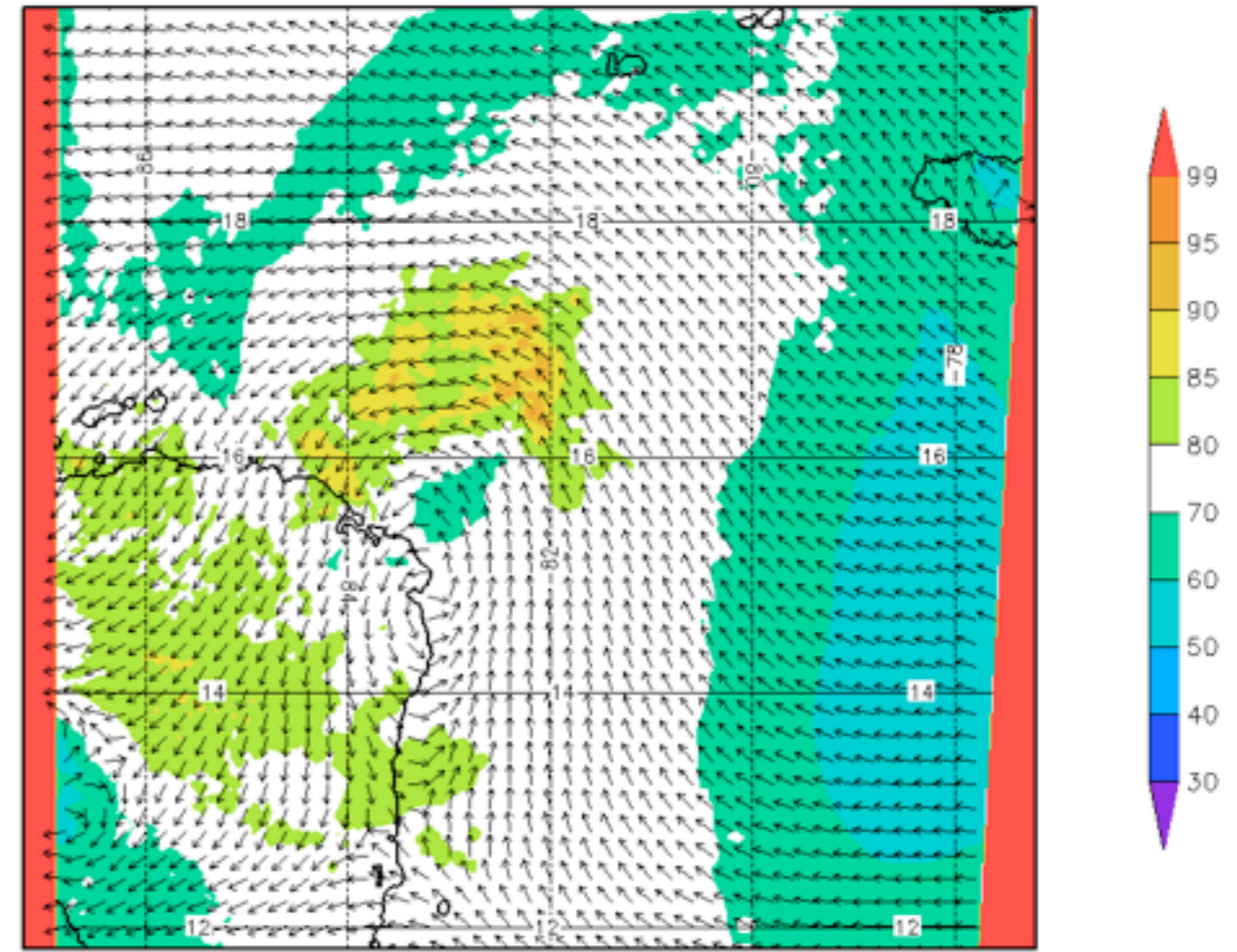
No Doppler

700mb rel humidity [%] for 0hr



initial time:2010102306

700mb rel humidity [%] for 0hr



initial time:2010102306

The plane did not get close to the center due to land.

Doppler

No Doppler