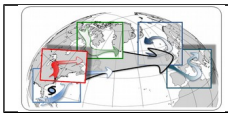	**NAWDEX 2016** **Weather summary**	**Date: 29/09/2016** **Author: J. Quinting**

Synoptic Analysis

A deep trough over the central North Atlantic and downstream ridge characterize the large-scale flow. An elongated PV streamer extends westward from the southern tip of the trough. This PV streamer starts breaking apart into two cut-off systems over North America. The eastern most cut-off system is expected to be involved in a cyclogenesis event over the Atlantic in the following days.
Cyclone “Walpurga” that developed earlier ahead of the upper-level trough is located to the north of Scotland. This low pressure system is associated with strong winds of more than 100 km/h over Scotland and Norway.

Forecast Day 1 (Friday, 30/09/2016)

The PV streamer over eastern North America will break apart into two cut-off systems. One of these cut-offs will be located over Newfoundland. To the south of this cut-off, the mean sea level pressure field indicates the development of a new low pressure system. On its eastern flank, warm moist air masses – most likely of subtropical origin - are being transported toward a low-level baroclinic zone. The air masses ascend along the baroclinic zone and form an intense warm conveyor belt. Cross-isentropic ascent within this warm conveyor belt reduces upper-level PV and thus contributes to a ridge building in downstream regions. The low-pressure system itself will likely deepen to less than 1000 hPa during the day.

Forecast Day 2 (Saturday, 01/10/2016)

On forecast day 2, an upper-level trough will approach the developing low pressure system from upstream regions. This trough provides upper-level forcing for a further deepening of the cyclone. The warm conveyor belt activity continues on the eastern flank of the cyclone. This results in erosion of upper-level PV and a ridge building to the north of the cyclone center. In addition, upper-level irrotational winds impinge on the remarkably strong PV gradient and thus contribute to a westward extension of the ridge.

Forecast Outlook

The intensification of the low pressure system will continue during the next day. Ensemble forecast suggest that the system will deepen to a central pressure minimum between 950 to 970 hPa. The upper-level PV structure indicates a LC2-type wave breaking above the cyclone center. The ridge amplification downstream is expected to continue due to persistent warm-conveyor belt activity.
Current forecast scenarios indicate a further cyclogenesis during Tuesday/Wednesday next week. This cyclone is predicted to move toward Iceland and thus will be followed intensively during the next days.