



The LEWP event of Januari 03 th 2012 in the Netherlands

Robertus R.M. Groenland, Rutger Boonstra, and Ricardo Rondinel
KNMI, V&W, De Bilt, Netherlands (Rob.Groenland@knmi.nl)

The LEWP event of Januari 03 th 2012 in the Netherlands

Drs. Robertus Groenland, KNMI
Drs. Rutger Boonstra, KNMI
Dr. Ricardo Reinoso Rondinel, TU-Delft

In this study, the LEWP structure of a wintertime squall line is investigated. This paper will assess the synoptic environment in which this squall line evolved, as well as the mesoscale features of the LEWP, including radar-reflectivity and radial velocity of the C-band radarnetwork of KNMI. Furthermore a model study on this case has been performed. With a non hydrostatic model (HARMONIE, resolution 2.5 km) the structure of the LEWP can be visualized, including precipitation/wind(gust) and convergence fields. In addition detailed radar information from the experimental X and S-band sites of TU-Delft is incorporated in this study. For example, in the reflectivity field, it was possible to identify the so-called S-broken pattern rear (front) inflow notches, hook echo, and the weak echo regions typically associated with tornadic and non-tornadic vortices. Moreover, vertical profiles showed a strong updraft-downdraft circulation and a bounded weak echo region which are not usually associated with squall lines but with mature tornadic supercells. This study focuses on the forecastable potential of small scale phenomena when using high resolution radar, also to draw lessons that can be used for better forecasting when KNMI implements Dual Pol radar in the years to come.