



Localization of Convective Storm Cells in the Vicinity of Airports

N. Dotzek (1), H.-D. Betz (2), H. Höller (1), V. Meyer (1,2), and P. Oettinger (3)

(1) DLR-Institute of Atmospheric Physics, Oberpfaffenhofen, 82234 Wessling, Germany (nikolai.dotzek@dlr.de, Fax: +49-8153-28-1845), (2) Physics Department, University of Munich, 85748 Garching, Germany, (3) NowCast mobile GmbH, Landsberger Str. 57, 82266 Stegen a.A., Germany

Within the BMBF research project RegioExAKT (www.regioexakt.de), the Atmospheric Research group of the Physics Department at the University of Munich and the Institute of Physics of the Atmosphere at DLR integrate data from a new lightning location system (LINET) and the radar facility POLDIRAD. The objective is to achieve improved recognition, localization and nowcasting of thunderstorm cells, focusing on the area of Munich international airport. The RegioExAKT project makes use of the advantages provided by LINET, mainly its high detection efficiency especially for weak lightning events, detection of cloud lightning, and highly accurate lightning locations. These features allow effective measurements of active storm cells and application of cell-tracking algorithms. In particular, areas in the vicinity of storm cells are well identified where no lightning occurs or where the probability for lightning is extremely low. Parallel radar observations complement the observations and will be exploited to infer both life cycles and severity of convective storms. The combination of the two systems within RegioExAKT is expected to provide nowcasting of better quality than hitherto available. In a first step, the Munich airport area will be surveyed, backed up by meteorological data from other available sources. One of the aims is a contribution to optimisation of airport ground operations and air traffic management.