



# 1 Investigation of Site Errors in the Lightning Detection System LINET

K. Schmidt (1), V. Meyer (2), H.-D. Betz (1), and W. P. Oettinger (1,3)

(1) Physics Department, University of Munich, Garching, Germany, (2) Institut für Physik der Atmosphäre, Deutsches Zentrum für Luft- und Raumfahrt (DLR), Oberpfaffenhofen, Germany, (3) nowcast Inc., 82266 Stegen, Germany, (kersten.schmidt(at)physik.uni-muenchen.de)

During the thunderstorm season from May to October 2007 LINET collected more than 16 million lightning events, using 87 sensors that cover about 8 million square kilometres. Each sensor is equipped with two orthogonal antenna loops which detect the vertical components of the magnetic induction vector in the VLF/LF regime and, thus, allow direction finding (DF). It is well known that so-called site errors lead to deviations between measured and correct direction of incidence, whereby the error is markedly dependent on the actual direction of incidence. Utilizing highly precise time-of-arrival (TOA) solutions for lightning location as a reference, DF site errors can be well determined on a statistically reliable basis. Results are shown and conclusions are presented with respect to i) the accuracy of correction functions and their usefulness for verification of TOA-solutions, and ii) the dependence of DF location errors as a function of utilized number of sensors and distance between lightning and sensors.