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SQUALL LINE: A CASE STUDY USING A LIGHTNING DETECTION SYSTEM AND WEATHER RADAR INFORMATION

P. Pinto (1), R. Deus (2)

Instituto de Meteorologia (1) ORM, (2) OMA, Rua C do Aeroporto de Lisboa
(ricardo.deus@meteo.pt, paulo.pinto@meteo.pt**)**

SUMMARY

During the afternoon and early evening of the 29th October 2002, a squall line affected mainland Portugal, where significant weather events took place (heavy rainfall, large hailfall and strong gusty winds), namely in the Figueira da Foz area. The life cycle of both the squall line, as a whole, and of an important mesoscale wave pattern (embedded in the squall line) were characterised using reflectivity data from the Cruz do Leão weather radar; this wave pattern was chosen since it affected the above mentioned urban area. Information retrieved from our recently installed lightning detection network, was also used in order to evaluate whether there was a consistent electromagnetic behaviour typical of any of the identified life cycle stages, both of the squall line as a whole and of the mesoscale wave pattern itself.

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