Remote sensing of severe convective storms using the MSG 2.5-minute rapid scan, weather radars and lightning detection data

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In 2012 and 2013, EUMETSAT has conducted several experimental 2.5-minute rapid scan sessions with its MSG satellites. Of these, the most interesting data sets were acquired on 20 June 2013 and 29 July 2013. On these days, many storms, interesting from the satellite perspective, evolved above central Europe, majority of these being severe.

The presented contribution aims at evolution of satellite-derived storm-top features at fine temporal scale, benefiting from the very short 2.5-minute scanning period. The satellite observations and derived products are compared with operational weather radar data from the Czech Republic and neighbouring countries, as well as with available Central European lightning detection data. Object-oriented tracking algorithm CELLTRACK is used for description of radar, satellite and lightning detection characteristics during life-time of individual convective storms.