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Faro's urban basin flood on the 28th November 2006

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On the 28th November, 2006, almost continuous rainfall occurred in the urban basin of Faro, Algarve (Portugal) between 03.30 am and 00.30 pm. Precipitation was more intense between 9.30 and 11.00 am (an average of around 20 mm/h) as estimated from the Portuguese Meteorological Office radar images. During this period of higher precipitation intensity (which did not coincide with the high tide on the estuary) some parts of Faro and its surrounding areas suffered significant flooding which the drainage system was unable to cope with.

This Poster aims to show the preliminary phase of a study that uses the potential of meteorological radar images for the analysis of urban floods induced by extreme precipitation. Optimization of urban drainage systems to minimize flood effects is also taken into consideration.

Using CAD software, radar images were defined as raster images and then georeferenced in order to analyse the trajectories and velocities for the different rainfall cells (the centre of each rain cell (area with the highest rainfall intensity) was defined by a point). The time gap between radar images was 30 minutes.

Although the rainfall intensity was not particularly high during the lapse of time in which the rain cell passed over the urban basin of Faro (from 10 to 20 mm/h) the rain cell moved very slowly. Consequently, the amount of volume water that fell on the city of Faro was substantial, causing the flooding.

Keywords: Floods, Intense precipitation; Urban area; Meteorological radar