

## HAREN: Hazard Assessment based on Rainfall European Nowcasts

Daniel Sempere-Torres<sup>1</sup>, Marc Berenguer<sup>1</sup>, Jarmo Koistinen<sup>2</sup>, Harri Hohti<sup>2</sup>, Vera Meyer<sup>3</sup>

<sup>1</sup>Centre de Recerca Aplicada en Hidrometeorologia. Universitat Politècnica de Catalunya, Barcelona (Spain).

<sup>2</sup>Finnish Meteorological Institute, Helsinki (Finland).

<sup>3</sup>Central Institute for Meteorology and Geodynamics, Vienna (Austria).

### ABSTRACT

This presentation introduces the research project “Hazard Assessment based on Rainfall European Nowcasts” (HAREN) funded by the Prevention program of the EC Directorate General for Humanitarian Aid and Civil Protection.

The goal of the HAREN project is to capitalize on the availability of Continental radar mosaics over Europe (made available through the EUMETNET program OPERA with a resolution of 2x2 km<sup>2</sup> and every 15 minutes) to improve precipitation nowcasting over the radar domain, which includes most of Europe.

During the project, precipitation nowcasts will be produced in real-time with a system based on two different components: (i) an “all-weather” module that forecasts the evolution of the entire precipitation field at Continental scale, and (ii) a specific “severe-weather” module for identifying and nowcasting intense rainfall based on the individual tracking of intense convective systems (such as convective cell clusters, mesoscale convective systems, or squall lines) and on the use of multi-sensor observations (satellite, lightning and surface stations) and NWP outputs.

Precipitation nowcasts generated with this system will be used to demonstrate its potential for hazard assessment. The same event does not imply the same hazard in different locations (as the probability of exceedance of a given amount of precipitation significantly depends on location). Therefore, within the project a warning system is being implemented to assess the magnitude of the event over the entire Europe. The first results of hazard assessment will be demonstrated in the test areas of the project, in Spain, Finland and Austria for some selected events.

Advances achieved during will be made available through the website of the project ([www.haren-project.eu](http://www.haren-project.eu)).