



## **Forecasts, warnings and social response to flash floods: Is temporality a major problem? The case of the September 2005 flash flood in the Gard region (France)**

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Flash floods are complex phenomena. The atmospheric and hydrological generating mechanisms of the phenomenon are not completely understood, leading to highly uncertain forecasts of and warnings for these events. On the other hand warning and crisis response to such violent and fast events is not a straightforward process. In both the social and physical aspect of the problem, space and time scales involved either in hydrometeorology, human behavior and social organizations sciences are of crucial importance. Forecasters, emergency managers, mayors, school superintendents, school transportation managers, first responders and road users, all have different time and space frameworks that they use to take emergency decision for themselves, their group or community. The integration of space and time scales of both the phenomenon and human activities is therefore a necessity to better deal with questions as forecasting lead-time and warning efficiency.

The aim of this oral presentation is to focus on the spatio-temporal aspects of flash floods to improve our understanding of the event dynamic compared to the different scales of the social response. The authors propose a framework of analysis to compare the temporality of: i) the forecasts (from Météo-France and from EFAS (Thielen et al., 2008)), ii) the meteorological and hydrological parameters, iii) the social response at different scales.

The September 2005 event is particularly interesting for such analysis. The rainfall episode lasted nearly a week with two distinct phases separated by low intensity precipitations. Therefore the Météo-France vigilance bulletin where somehow disconnected from the local flood's impacts. Our analysis focuses on the timings of different types of local response, including the delicate issue of school transportation, in regard to the forecasts and the actual dynamic of the event.