



# FLASH FLOODS AND PLUVIAL FLOODING



**ISPRA**

Istituto Superiore per la Protezione  
e la Ricerca Ambientale



**REGIONE AUTONOMA  
DELLA SARDEGNA**



**MINISTERO DELL'AMBIENTE  
E DELLA TUTELA DEL TERRITORIO E DEL MARE**

## Working Group F Thematic Workshop

# Numerical hydro-meteo-marine modelling at ISPRA in the context of the flash-flood events monitoring, forecasting and statistical analysis activities

**Marco Casaioli, Stefano Mariani, Barbara Lastoria,  
Martina Bussettini, and Giuseppina Monacelli**

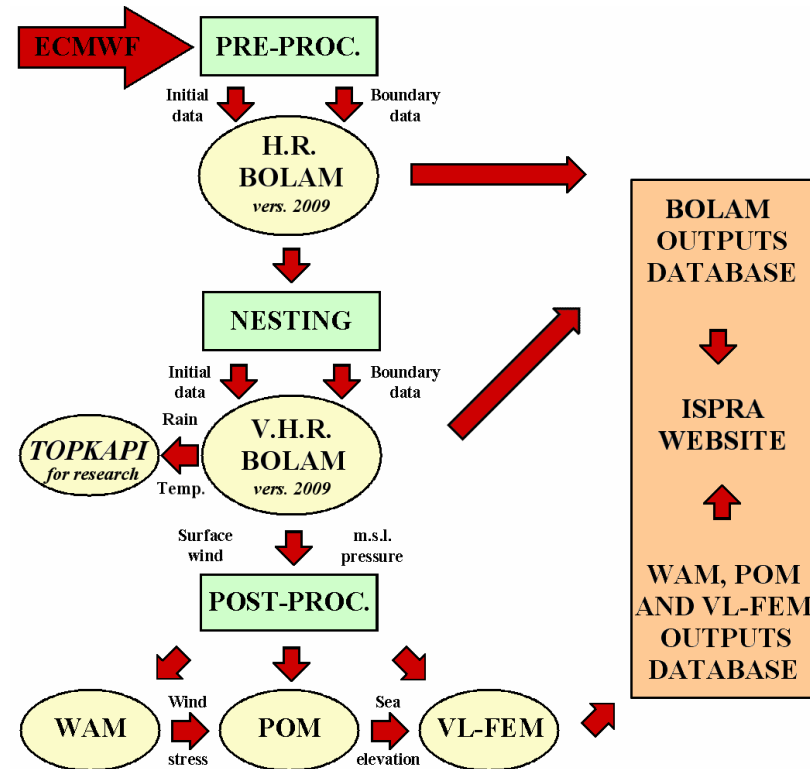
**ISPRA – Institute for Environmental Protection and Research, Rome,  
Italy**

*26<sup>th</sup>-28<sup>th</sup> May 2010, Cagliari, Italy*



ISPRA's Hydro-Meteo-Marine forecasting system (**SIMM**) → a chain of meteorological and marine models operational over the Mediterranean Basin

- BOLAM: 10-km hydrostatic LAM;
- Wave model (WAM) on Mediterranean and sea elevation model on Ionian/Adriatic seas (POM) and Venice Lagoon (VL-FEM);
- Distributed rainfall/runoff model TOPKAPI over two Italian river basins (Adige and Reno) in research configuration.



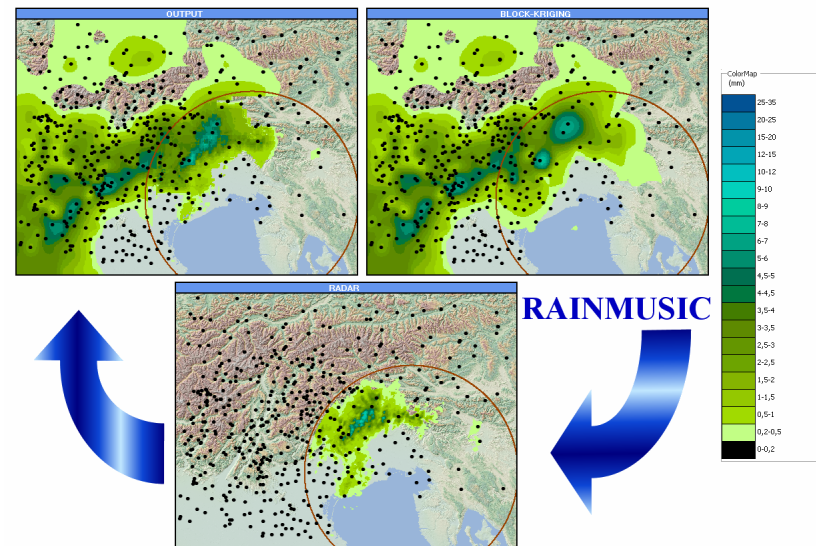
SIMM products are used for intense and damaging events monitoring and study, development of statistical methodologies suitable for flood risk management tasks, water resources assessment, etc, often within WMO and EU-funded initiatives concerning hydro-meteorology tasks and flash flood issues.



Meteorological forecasting as a key issue in FRM should be supported by a **thorough verification process** based on a reliable observational analysis.

In this frame, our activities, also within WMO and EU-funded initiatives, focus on:

- Model verification techniques (subjective, statistical, object-oriented, and multi-scale – **intercomparison studies**);
- Combining results from different techniques (a “**multi-method**” approach);
- **Representativeness** of the rainfall predicted and observed fields (“optimal interpolation” of available data sources; space-time scales).



Projects: INTERREG IIC Flood, HYDROPTIMET, VOLTAIRE, HYDROCARE, FORALPS, and MAP D-PHASE



## Working Group F Thematic Workshop FLASH FLOODS AND PLUVIAL FLOODING



*Monitoring, coordinating and funding flood research projects at European level → CRUE ERA-Net:*

- Two Research Funding Initiatives have been launched (see Wouter Vanneuville presentation – Theme 4) to support the implementation of the EU Floods Directive, which requires a broad basis of knowledge and tools and the development of improved management and governance strategies, and to establish trans-national collaborative research projects
- CRUE Research agenda to strengthen EU research on FRM



Project: CRUE ERA-Net – FP6

<http://www.crue-eranet.net>

CRUE publications available at the  
Workshop registration desk