



## Workshop 2: PaPRIKa, a multi-criteria method for vulnerability mapping of karst aquifers / KarstMod, an adjustable platform for hydrodynamic modeling in karst aquifers

This workshop will be split into 2 half-day trainings:

### 1) PaPRIKa

PaPRIKa is a multi-criteria method for mapping the vulnerability of karst aquifers (Dörfliger and Plagnes 2009). The PaPRIKa method summarizes expert knowledge of the aquifer's structure and functioning in four criteria: Protection (P), Infiltration (I), Reservoir (R) and Karstification degree (Ka). Vulnerability index results of the weighted combination of these four criteria.

The PaPRIKa plugin for QGIS ([www.qgis.org](http://www.qgis.org)) allows a step-by-step application of the method steps to generate P, I, R, and Ka maps as well as the vulnerability index. The use of the plugin:

1. Relieves the user of some fastidious aspects of data processing,
2. Allows a quick, easy and standardized application of the PaPRIKa method,
3. Saves time for the user to focus on the hydrogeological expertise.

During the short course, you will handle and apply the PaPRIKa toolbox. For this workshop, it is not necessary to be an expert of QGIS, a beginner level in GIS will be sufficient.

The PaPRIKa toolbox is a collective project developed by the UMR EMMAH ([www6.paca.inra.fr/emmah\\_eng](http://www6.paca.inra.fr/emmah_eng)) and supported by the SNO Karst, the Sorgues Basin Joint Association ([www.lasorgue.com](http://www.lasorgue.com)) and the PACA region.

### 2) KarstMod

KarstMod provides an adjustable modeling platform for both the simulation of spring discharge at karst outlets and the analysis of the hydrodynamics of the compartments considered in the model. In order to promote good modelling practices, the platform provides a variety of graphs and tools that help gain improved understanding and insights in the behaviour of the models, and detect possible flaws in the structure and parameterization.

In this short KarstMod course, you will discover the software's functionalities based on model application to two karst systems.

This platform is developed within the framework of the KARST observatory network initiative from the INSU/CNRS, which aims to strengthen knowledge-sharing and promote cross-disciplinary research on karst systems at the national scale.