

Using IDPR to characterize recharge area of karst aquifers from catchment to regional scales

Yvan Caballero¹, Stéphanie Pinson², Jean-Baptiste Charlier¹, Sandra Lanini¹

¹ BRGM, 1039 rue de Pinville, F-34000 Montpellier, France

² BRGM, 3 avenue Claude Guillemin BP 36009 45060 Orléans

* corresponding author: e-mail: y.caballero@brgm.fr Tel: +33 (0)4 67 15 79 62

The shape and the nature of hydrographic networks on karst environments are closely linked to the infiltration capacity of geological formations. Thus, the presence or absence of a river in a favorable topographic context can be interpreted in terms of karstic aquifers recharge potential. We present the GIS built index of infiltration and runoff properties of landscape (called IDPR) as an interesting tool for the characterization of the karst extension and for the further recharge estimation of such aquifers. A new version of the IDPR tool has been released over France in 2017 which spatial resolution (25 m) becomes very useful for the detection of contributive zones for karst aquifers recharge. Examples of the IDPR application at the river basin scale (Fontaine de Vaucluse) and at the regional scale (Rhône river basin) will be presented. Base flow estimation methods are used for the calibration of the IDPR index in terms of infiltration capacity, leading the IDPR index to be useful for recharge estimation.