



Groundwater table mapping accounting for river-aquifer connectivity and human pressure

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A groundwater table mapping method that accounts for surface water-groundwater (SW-GW) connectivity and human pressure, such as pumping and underground structures occurrence, has been elaborated and tested in the heavily urbanized Parisian area. The method developed here is in two steps: first, hard data (hydraulic head) and soft data (dry wells) are used as conditioning points for the estimation of the SW-GW connection status. For this purpose, a disconnection criteria is adjusted regarding the recorded time-series of observed unsaturated zone depth (UZD), which can be considered as a default value in areas lacking data to adjust it. The second step consists in the final mapping of groundwater table. Given the knowledge of this disconnection criteria, the final map is achieved with an ordinary kriging of the UZD that integrates the surface water elevation as a nil unsaturated zone where it is relevant. The methodology is demonstrated in the Paris urban area where two datasets of UZD observations were collected by water resource managers under low and high flow conditions.