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Residence time of groundwater in porous aquifers by estimating Ra retardation factor

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Groundwater age can differ when determined by radioactive tracers due to different retardation factors. According to Krishnawami et al. 1982, Radon isotopes supply to groundwater is considered as a measure of the supply of Radium isotopes. This assumption considerably affects the estimation of the Ra retardation factor. Briganti et al. 2020 reports how the different groundwater supply mechanisms of Ra and Rn should be considered in order to avoid a relevant variation between the real water residence time and the age calculated. In the same work an alternative method for estimating Ra retardation factor is proposed without using Rn data as a comparison term. A synthesis of the main results of laboratory tests is presented in order to describe possible applications of the method.

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