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Groundwater flow system of the Yiluo River Basin from the tritium and stable isotopes ratios

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Groundwater flow system and the water quality in Yiluo River Basin, China
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The author has carried out the analysis of tritium and stable isotopes of surface water and groundwater to evaluate the groundwater flow system in the Yiluo River basin, China.

1) Tritium concentrations of the groundwater in the slope of the southern and northwestern mountain range were higher than 10 T.U. and suggested that the residence time of these groundwater was younger than 50 years. On the other hand, tritium concentrations of the deep groundwater along the Yiluo River and in the lower area of the basin were very low. Therefore, the residence time were estimated to be longer than 60 years.

2) The stable isotopic ratios of hydrogen and oxygen of the groundwater showed relatively low value in the southern peripheral part of the basin and showed relatively high value in the central part. In the eastern part, down-stream part, and the southeastern part of the basin, groundwater with low dD and $d^{18}O$ flows toward the lower area of the basin.

Keywords: tritium concentration, stable isotopic ratios, groundwater flow system, The Yiluo River Basin