

## **Hydrochemical characteristics and interaction processes of GW-SW in the east of Jiangnan Plain, China**

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Most of villages in the Jiangnan Plain rely on groundwater and surface water resources for the supply of domestic water. Water geochemistry and its evolution can help to better understand the water quality and provide a basis for water resources management. The research aims to analyze the hydrochemical characteristics and identify the interaction process of groundwater and surface water (GW-SW). Water samples in the Eastern Region of Jiangnan Plain were collected, and major ions and stable isotopes ( $\delta D$ ,  $\delta^{18}O$ ) were analyzed. The results of Gibbs figure and scatter plot show that rock weathering is confirmed to play an important role in the mechanisms of groundwater. The water chemistry is mainly controlled by dissolution of dolomite and calcite. The hydrogen and oxygen isotope compositions of the samples range between -54.86‰ and -15.71‰, and from -8.61‰ to -3.06‰, respectively. The characteristics of stable isotopes indicate that the water mainly derive from modern local meteoric water. In addition, most of the water samples are located up the GMWL and LMWL, which suggests the water samples may also experience a degree of evaporation. Due to the evaporation effect and hydrologic conditions, heavy isotopes are more enriched in the phreatic water comparing to the confined water. The points of surface water are located in the groundwater area, indicating that there is a strong hydraulic connection between the surface water and groundwater.