Dating method for young groundwater using sulfur hexafluoride (SF6)

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In recent years, conservative dissolved gases such as CFCs (chlorofluorocarbon) and SF6 (sulfur hexafluoride) have been used to determine the recharge age of the young groundwater. The effective dating range of CFCs is 15-50y and that of SF6 is 0-30y. Considering the high flow rate of groundwater in Japan, the dating method using SF6 may become a more powerful tool than CFCs method.

In the present study, we measured the SF6 concentrations of spring water and groundwater in central Japan. Based on these data, we discuss the potential use of the SF6 as a dating tool of young groundwater in Japan.