

Tidal responses in dissolved gases in groundwater at Omaezaki, central Japan.

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We have developed a continuous monitoring system for dissolved gases in groundwater, by using a gas-permeable silicone membrane and a quadrupole mass spectrometer. We have installed this system at Omaezaki, Shizuoka prefecture, and Kamakura, Kanagawa prefecture, central Japan. Here, we focus our attention on tidal and barometric responses in temporal variations of the dissolved gas concentration. We examined amplitude and phase shift for different frequencies of tidal constituents, by comparing them with those of theoretical solid and ocean tides.