

**Study of the chemical fluxes
associated with SGD in several
hotspots along the French
Mediterranean coastline**

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Although submarine groundwater discharge (SGD) has been investigated in many places of the world, very few studies were conducted along the French Mediterranean coastline, despite presence of several well-known karstic springs.

Almost no information is available on the fluxes of water and chemical elements associated with these systems and on their potential impact on the geochemical cycling and ecosystems of the coastal zones. In this study, we report airborne thermal infrared (TIR) images that allowed us to locate fresh groundwater inputs in several coastal lagoons and along the French Mediterranean coastline. The four radium isotopes (²²³Ra, ²²⁴Ra, ²²⁶Ra, ²²⁸Ra) and radon (²²²Rn) were analyzed in several hotspots to quantify SGD fluxes. We report fluxes of various chemical compounds (nutrients, DIC, DOC, DON, DOP, trace elements as well as several pollutants) associated with these SGD. The SGD fluxes are compared to the river fluxes.