



# Methane seepage in the sedimentary record: application of geochemical proxies to modern and fossil systems

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Methane seepage is widespread at continental margins, reflecting the distribution of major geologic reservoirs, gas hydrates and permafrost. Biogeochemical processes taking place during gas migration through the sediment drastically reduce the amount of methane eventually reaching the surface, thus representing a critical biofilter. Those processes are accompanied by the precipitation of authigenic minerals, e.g. carbonates, sulfates, and sulfides, carrying a unique isotopic signature that helps us track the dynamic of methane oxidation through time. Here, I will show some applications to modern sediment cores from the Barents Sea and ancient seep deposits now exposed on land (Miocene; Northern Italy).

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