Fluid distribution of the Cretaceous Shimanto accretionary prism, southwest Japan

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The P-T conditions of the fluid is determined by combination of isochore, estimate from the homogenization temperature analysis of the fluid inclusion and maximum temperature, based on the vitrinite reflectance data.

The methane-rich fluid was trapped at 5-10 km with a geothermal gradient of 5-24 C/km, and the water-rich fluid was trapped at 3-5km with a higher geothermal gradient of 50 C/km. Although they are very different in the composition, the isotopic data suggested that both minerals affect the isotopic buffer from the metamorphic water. The metamorphic water presented in any place below 3 km in depth, and the methane-rich fluid was flown dominantly at deeper portion, probably along the decollement zone.