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HRE031-07

Room:303

Time:May 24 10:00-10:15

## Inorganic precipitations of marine carbonate in sandstone do not release CO<sub>2</sub> outside: Evidence from Sr, O and C isotopes

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<sup>87</sup>Sr/<sup>86</sup>Sr,  $\delta^{18}\text{O}$  and  $\delta^{13}\text{C}$  isotopes of carbonate in calcareous sandstone indicate simultaneous formations of the 1st-carbonate precipitation from seawater with 2nd-precipitation of carbonate by the reaction silicate and released bicarbonate ion. Triassic Hiraiso Formation of the South Kitakami Terrane contains calcareous sandstone. It is considered that the early Triassic period was a dried climate and the Hiraiso Formation was deposited at near shore marine. Carbonate phase and silicate phase are separately examined. <sup>87</sup>Sr/<sup>86</sup>Sr and  $\delta^{18}\text{O}$  isotopes of the carbonate phase were lower than the values of limestone at that time. The values show the intermediate between silicate minerals and marine carbonate, while  $\delta^{13}\text{C}$  shows the value of marine carbonate. The carbonate distributed homogeneously in lithic fragments and partly replaced plagioclase. The <sup>87</sup>Sr/<sup>86</sup>Sr and  $\delta^{18}\text{O}$  isotopes are the mixed values of marine strontium and oxygen with silicate strontium and oxygen. Very small carbon is contained in the silicate phase and the value shows always that of marine.

Keywords: carbon dioxide, geological storage, Sr isotope, O isotope, C isotope, calcareous sandstone