## IODP 310 (Tahiti Sea-level Change): Carbonate Diagenesis affected by Volcanogenic Sediments

Woo, K. S.<sup>1</sup>, Kim, Y. J.<sup>1</sup> and Jang, S. W.<sup>2</sup>

<sup>1</sup>Department of Geology, Kangwon National University <sup>2</sup>Korea Institute of Geoscience and Mineral Resources

The main objective of the IODP Expedition 310 "Tahiti Sea-Level Change" is to reconstruct sea-level rise due to deglaciation after LGM (Last Glacial Maximum) and corresponding SST variations. This study is to delineate carbonate diagenesis of Tahiti reefal limestone during LGM when the limestone was subaerially exposed. Two cores from Tiarei and Maraa sites near the Tahiti Island were investigated, and the limestone is mostly composed of corals, coralline algae, microbialites with a minor contribution of green algae, benthic foraminifers, mollusks and echinoderms. It is notable that micribialites is one of main constituents in the limestone, that is not common elsewhere. Overall the limestone in this study had undergone meteoricvadose diagenesis during sea-level drop (LGM). As s result, the degree of diagenetic alteration was very little and aragonite skeletons still retain their original mineralogy. However, the degree of diagenetic alteration between two sites is quite different: the limestone from the Maraa site were more altered that that from the Tiarei site. Diagenetic alteration involves the degree of calcitization and equant calcite cementation as well as the abundance of vuggy pores due to leaching. It appears that the difference in the degree of alteration between two sites resulted from the difference in the amount of volcanic sediments. Cements in the limestone include acicular aragonite and fibrous high Mg-calcite cements of shallow marine origin and equant calcite cements of meteoric origin. It is interesting to observe numerous fibrous Mg-calcite cements in vuggy pores. Because these cements are considered to be of shallow marine in origin, the presence of these cements in vuggy pores implies that the cements were precipitated in shallow marine environment during deglaciation.