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# Rock-magnetic study on serpentinite from Tokunoshima Island, southern Kyushu, Japan

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Serpentinite occur in Cretaceous Accretionary complex on the Tokunoshima Island. They are intruded by Paleogene granitic rocks, and are covered by Quaternary calcareous sediments. Because of the narrow distribution of the serpentinite, their petrologic and rock magnetic study had been insufficient. Then, we report 1. Original rock of serpentinite in Shimanto Terrane, and 2. Magnetic characterization of contact metamorphosed serpentinite.

The serpentinite distribute along 3 NNE-SSW faults in central to southern part of the Island. The serpentinite shows a hardly sheared, dark green with glossy occurrence or alteration together with pale green layers has become the talc due to thermal effect of contact metamorphism. Based on the relict minerals, dunite and clinopyroxenite are suggested in the original rock. Olivine is finely crashed, and is part of what is altered to the serpentine showing mesh-structure. Fine-beads magnetite is remarkably observed in the former, the latter less extreme.

The serpentinization process is that olivines react with water and produce serpentines and magnetites. The volume of reacting water affects volume of magnetite produced by serpentinization when these rock bodies come from the same peridotite series. We collected samples from three sites in Tokunoshima Island. Main magnetic carrier of these rocks is presumed to be magnetite. Curie temperature of these samples indicates about 560 degrees.

The serpentinite of Tokunoshima Island originated from the dunite and clinopyroxenite, suffering moderate serpentinization and contact metamorphism. Rock-magnetic study revealed that stable magnetization. It may get TRM after contact metamorphism.

Keywords: serpentinite, Tokunoshima Island, rockmagnetism