

R004-08

C会場：9/26 AM2 (10:45-12:30)

11:00~11:15

## 土壌性磁性鉱物生成の水熱実験（予報）

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## A preliminary report of hydrothermal experiments for pedogenic magnetic mineral formation

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Soils are formed on the earth's surface by aqueous alterations of clastics produced by physical and chemical weathering of rocks. Pedogenesis is associated with formation of magnetic minerals that cause magnetic enhancement. Therefore, the degree of pedogenesis is often represented by magnetic susceptibility, which is also often used as a proxy of paleoprecipitation. In spite of these practical usages of magnetic proxies, we do not fully understand how magnetic minerals are formed in soils. To elucidate the formation process of pedogenic magnetic minerals, we carried out hydrothermal experiments at temperatures of 150 – 200 degrees C with closed-type pressurized reactor cases, using loess/paleosol samples from the Chinese Loess Plateau. All the samples increased in magnetic susceptibility, the increase rate of which depends on the degrees of pedogenesis of samples. Hysteresis measurements and IRM acquisition experiments reveal that SP and SD (/vortex) size magnetite particles are newly formed, with magnetization decreases caused by thermal oxidation of fine-grained detrital magnetite particles. We discuss temporal changes of neof ormation of magnetic particles during the hydrothermal experiments, based on the data of hysteresis parameters, saturation isothermal remanent magnetization intensity, and magnetic susceptibility.