

K215-013

Room: 101B

Time: May 21 13:45-14:00

Existence of ferroelectric ice in the Universe

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Whether ferroelectric ice XI exists in the outer solar system attracts much interest, because long range electrostatic forces are caused by the ferroelectricity. Future plans for finding natural ice XI in space will be important issues in planetary science. We have been investigating how to make perfect ice XI by time-resolved neutron diffraction measurements. We report the detail of our recipe for the making ice XI in the laboratory. The results present useful information for infrared observation studies of ice objects in the solar system and the Galaxy.