

SGD001-02

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Measurements of Martian rotational variations by space geodetic techniques

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At present, a multi-satellite mission to Mars called MELOS (i.e. Mars Exploration with Lander-Orbiter Synergy) is under study. A space geodetic instrument has been proposed as one of the instruments in this project. This equipment will allow us to carry out precise measurements of Martian rotational variations (e.g. precession, nutation, polar motion, and length-of-day variation) through a radio link between the station(s) on the Earth and the artificial satellites. Scientists and technologists in National Astronomical Observatory of Japan and some other institutes and universities are discussing this instrument, especially its observation system and scientific effort. The aim of this presentation is to introduce the latter briefly. We will show how we expand our knowledge of the surface environment, the internal structure, and their evolution on the red planet by observing its rotation through the geodetic instrument as one of the possible geophysical payloads on board MELOS.