

[P-PS02_28AM2]Mars

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The study on Mars has greatly been advanced due to new data from modern missions as well as to new results from theoretical and numerical works. Morphology and variable phenomena, seen on the surface, in the atmosphere and its surrounding plasma, all indicate that Mars is still an active planet. After the successful launch of Japan's new EPSILON rocket (September 2013), possibilities of small planetary missions are becoming more realistic (Mars is the most important target object, of course). In this session, current researches on Mars, including the latest results from missions, as well as future mission plans are discussed.

11:40 AM - 11:55 AM

[PPS02-P04_PG]Estimation of Martian atmospheric composition change caused by CO₂ condensation and its application to radio occultation

3-min talk in an oral session

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Keywords:Mars, CO₂, supersaturation, condensation, radio occultation

We estimated the Martian atmospheric composition change caused by CO₂ condensation using the Ar measurements obtained by Gamma Ray Spectrometer (GRS) onboard the 2001 Mars Odyssey. We applied this estimation of the composition change to the rederivation of the radio occultation (RO) measurements of Mars Global Surveyor (MGS) obtained at polar latitudes of the winter hemisphere, because the MGS RO standard product which is available to the public did not consider the atmospheric composition change by CO₂ condensation. Using the rederived MGS RO measurements, we investigated the occurrence of CO₂ supersaturation in the Martian polar winter atmosphere and found that there were more supersaturation in the rederived data than in the original data.