

Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

©2011. Japan Geoscience Union. All Rights Reserved.



U003-P02

Room:Convention Hall

Time:May 26 16:15-18:45

A plan to study the Venus cloud structure based on the several Venus observations

Seiko Takagi^{1*}, Naomoto Iwagami¹

¹The University of Tokyo

Venus is our nearest neighbor, and has a size very similar to the Earth's. However, previous spacecraft missions discovered an extremely dense (92 bar) and CO₂ atmosphere with H₂SO₄ clouds floating at high altitudes. H₂SO₄ clouds covered whole planet. The CO₂ atmosphere brings about a high atmospheric temperature (740 K) near the surface via greenhouse effect. The atmospheric circulation is also much different from the Earth's. The mechanisms which sustain such conditions are unclear. To understand such Venus climate, radiative transfer calculation including both sunlight absorption and scattering by cloud particles and atmosphere is performed. 'Cloud model' is necessary for this calculation. The 'cloud model' is vertical distribution of optical thickness of each cloud particles (mode 1, 2 and 3). The 'Pollack model' is famous and often used. However, I think Pollack model should be improved for several reasons. The purpose of my study is make new realistic cloud model. For this purpose, previous entry probe, ground-based spectroscopic observation and Venus Express observation will be used to make new cloud model.

Keywords: Venus, cloud