



Automated cloud tracking system for Akatsuki and Venus Express

Kazunori Ogohara (1), Toru Kouyama (2), Hiroki Yamamoto (3), Naoki Sato (4), Masahiro Takagi (5), and Takeshi Imamura (6)

(1) Institute of Space and Astronautical Science, JAXA, Sagamihara, Japan (ogohara@gfd-dennou.org), (2) University of Tokyo, Sagamihara, Japan (kouyama@stp.isas.jaxa.jp), (3) Kyoto University, Kyoto, Japan (hiroki@kugi.kyoto-u.ac.jp), (4) Tokyo Gakugei University, Koganei, Japan (snaoki@u-gakugei.ac.jp), (5) University of Tokyo, Tokyo, Japan (takagi@eps.s.u-tokyo.ac.jp), (6) Institute of Space and Astronautical Science, JAXA, Sagamihara, Japan (imamura.takeshi@jaxa.jp)

We have constructed an automated data processing system for Akatsuki and Venus Express including correction of the satellite's pointing, the coordinate transformation and cloud tracking. In this system, correction of the pointing of the satellite is important for improving accuracy of the cloud motion vectors obtained by cloud tracking. Attitude errors of the satellite are reduced by fitting an ellipse to limb of an imaged Venus disk. Next, longitude-latitude distributions of brightness are calculated to simplify the derivation of cloud motion vectors. The grids are distributed at regular intervals in longitude-latitude coordinate. After applying the solar zenith correction and a highpass filter to the longitude-latitude distributions of brightness, the cloud features are tracked using 2 images. As a result, we obtain cloud motion vectors on longitude-latitude grids equally spaced. These processes will be pipelined and automated for all data obtained by combinations of cameras and filters onboard Akatsuki. Preliminary results obtained by applying the system to UV data of Venus Monitoring Camera onboard Venus Express will be shown in the presentation.