JASMINE – Data analysis and simulation –

Y. Yamada (1), N. Gouda (2), Y. Kobayashi (2), T. Yano (2) and JASMINE Working Group

(1) Kyoto University, Kyoto, JAPAN, (2) National Astronomical Observatory of Japan, Tokyo, JAPAN

Japan Astrometry Satellite Mission for INfrared Exploration (JASMINE) project stands at the stage where its basic design will be determined in a few years. Then it is very important to simulate the data stream generated by astrometric fields at JASMINE in order to support investigations of error budgets, sampling strategy, data compression, data analysis, scientific performances, etc. We construct a simulation system that should include all objects in JASMINE such as observation techniques, models of instruments and bus design, orbit, data transfer, data analysis etc. in order to resolve all issues which can be expected beforehand and make it easy to cope with some unexpected problems which might occurre during the mission of JASMINE. For position reconstruction, we are required to determine positions of stars and instrument attitudes simultaneously. For doing this, overwrapping focal plane images with high accuracy is needed. We use statistical method which is used in Support Vector Machine for optimizing observation programm. For getting high accuracy observations, we also required to detect attitude error from mission data. Principal Component Analysis is effective for this perpose.

In this poster presentation, we explain topics on the data analysis and system simulation for JASMINE project.