

## **Modelling of EIS spectrum drift from instrument temperatures**

Suguru Kamio

*MPS*

Hirohisa Hara

*NAOJ*

Tetsuya Watanabe

*NAOJ*

**Abstract.** An empirical model has been developed to predict EIS spectrum drift from instrument temperatures. EIS spectrum shows artificial drift in wavelength dimension in sync with the revolution of the spacecraft, which is likely to be caused by temperature variations inside the spectrometer. The drift amounts to +/-35 km/s in Doppler velocity and introduces difficulties in velocity measurements.

An artificial neural network (ANN) is incorporated to establish relationship between instrument temperatures and the spectrum drift. The empirical model reproduces observed spectrum shift by using instrument temperatures with RMS error of 5 km/s. This procedure is robust and applicable to any EIS spectrum obtained in last three years.