Poster Session (P)
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# INFLUENCE OF STAR ACTIVITY ON THE PRECISION OF SPECTRAL VELOCITY MEASUREMENT NAVIGATION

**Abstract**

Stars are important sources for celestial velocity measurement navigation in deep space exploration missions. Star activity causes Doppler effects on starlight and further influences the measurement results of navigation sensor. In this paper, the characteristic spectrum movements of sun-like star is studied based on the solar photospheric model. The system errors are mathematically modeled based on proper motion and planetary perturbation theories. The model precision is estimated based on measured data. The influence of star activity random errors on the result of multi-star velocity vector determination is studied under different measurement precision. The result in this paper can be used as a reference for navigation star selection, sensor design and data processing.