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## A DATA LOCATION PROCESSING MODEL FOR MULTI-SENSOR IN LUNAR EXPLORATION

**Abstract**

With the development of the space exploration technology and the remote sensing technology, satellite platform is equipped with multiple types of sensors to achieve lunar detection. For the location process of observation data which received from different sensors on the same platform or system, the location model is usually proposed based on corresponding sensor. Because different sensors require different location model, the results evaluation and the integration of ground data processing from the same platform or reference system are performed with great difficulty, moreover, due to deep space orbit measurement error of the positioning accuracy, the high precision location model must be deep studied. Based on this, A satellite of lunar explore location model for multi-sensors is proposed. Through study of the optical camera, synthetic aperture radar ( SAR ), space environment probe, laser altimeter and other types of sensor imaging geometry and field view characteristics, the initial universal sensor observation vector for different sensor-viewers is built, which can be derived by selecting corresponding point num from the conic section. Establishing the strict lunar coordinate transformation system and the lunar ellipsoid reference model, the location result can be solved based on the iterative least squares algorithm. The advantage of the model is universal,fast computing and with high precision. As referenced with STK,the model reaches highly accuracy in the experimental results.