

GNSS 天线相位中心偏差检测方法

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摘要: 对于高精度测量, 天线相位中心的偏差影响不能忽视, 测绘型天线在使用之前需要进行检定, 确保不超过误差容限. 通过对天线相位中心偏差标定过程分析, 建立了一种新的观测模型, 处理相对定位的基线解算数据, 基于最小二乘准则估计旋转中心和相位中心偏差. 该方法不需要约束天线的旋转角度和观测数据个数, 提高了天线相位中心偏差标定的精度, 通过对 GNSS-750 型测绘天线实际测试结果表明, 天线相位中心水平偏移标定精度优于 0.05 mm.

关键词: 天线相位中心; 相位中心偏差; 超短基线; 检测

The Determination of GNSS Antenna Phase Center Offsets

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Abstract: The GNSS antenna phase center offsets affects the result of navigation positioning, so it can't be ignored for high-precision measurement. It is essential for GNSS antenna to measure the phase center offsets before high-precision satellite navigation surveying. With the analysis of antenna phase center offsets calibration process, a new observation model is established, which estimate the center of rotation and the phase center offsets by processing the baseline data based on least square criterion. This model does not constrain the rotation angel of the antenna and the number of the observed data, which improved the measure accuracy. The test results of GNSS-750 indicate that the proposed method can measure the antenna phase center offset with the measuring accuracy less than 0.05mm.

Key words: antenna phase center; pPhase center offsets; mini baselines; Determination

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