

论文

基于CHAMP短弧长动力学轨道的地球重力场模型

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摘要 讨论了基于CHAMP卫星动力学轨道数据以及加速度计数据推求地球重力场模型的动力学法, 推导了将加速度计观测数据的尺度和偏差以及卫星初始状态向量与地球重力场位系数一起求解的数学模型. 采用CHAMP卫星120天的动力学轨道数据和加速度数据解算出50阶次的地球重力场模型TJCHAMP01S, 并利用各种方法对该模型进行了检核, 结果表明: TJCHAMP01S模型精度优于相同阶次的EGM96和EIGEN_1S模型.

关键词 [CHAMP](#) [动力学法](#) [重力场模型](#) [尺度和偏差](#) [初始状态向量](#)

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A gravity field model based on CHAMP short_arc dynamical orbits

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Abstract We discuss the dynamical method for recovering the gravity field model based on the dynamical orbits and accelerometer data of CHAMP and derive the mathematical algorithm to solve the accelerometer scale and bias, the satellite's initial state vector and the model coefficients simultaneously. The gravity field model TJCHAMP01S has been recovered with the 120_day CHAMP data including dynamical orbits and accelerometer data, and validated based on various criteria. The results show that the model TJCHAMP01S is more accurate than the EGM96 and EIGEN_1S model of the same degree and order.

Key words [CHAMP](#); [Dynamical method](#); [Gravitational field model](#); [Scale and bias](#); [Initial state vector](#)

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