



中国预印本服务系统

您尚未登录NSTL网络服务系统
[去NSTL首页登录](#)

[分类浏览](#)
[文章检索](#)
[文章提交](#)
[系统介绍](#)

您好, 目前预印本系统的用户信息已经并入NSTL网络服务系统之中, 如果您要提交或者管理个人论文, 请返回NSTL系统首页进行登录, 然后再访问预印本系统;

同时, 新用户的注册也请到NSTL首页去完成。

原“国外预印本门户”, 因丹麦科技大学图书馆技术信息中心关闭其平台而停止服务。

分类浏览

【所属分类】: 自然科学--天文学

【标题】: 水星轨道异常: 几种引力理论之比较

【作者】: 汤克云

牛顿引力定律极好地解释了太阳系行星的运动轨道。对水星轨道作100年的观测, 仅有微小的无法用牛顿理论去解释, 偏差率只有。除牛顿引力, 本文还考察了3种引力理论对水星轨道的解释, 包括史瓦西轨道方程、后牛顿近似和推迟引力。结论是, 史瓦西轨道无法解释水星轨道异常, 后牛顿近似的合理性有待深入研究; 迄今为止, 考虑了引力源相对于观测者的速度及加速度的推迟引力可能对水星轨道异常作出了物理图像最清楚、最合理、最完整的解释。

【摘要】:

【关键词】: 水星轨道异常, 牛顿引力, 史瓦西轨道方程, 后牛顿近似, 推迟引力

【联系方式】: kytang@bao.ac.cn

【发布时间】: 2014-11-05

【发表状态】: N未发表

【TITLE】: Mercury's orbit anomaly: a comparison on several kind of gravitational theories

【AUTHORS】: Keyun Tang

Newton's law of gravity offers an excellent explanation on planet orbits in the solar system. For 100 years, only a tiny part of Mercury's orbit can't be well explained by Newton's gravitation, the deviation rate is only . In addition to Newton's explanation, this paper also examines explanations on Mercury's orbit by three kind of gravitational theories, including Schwarzschild orbit equation, PPN approximation and retarded gravitation. The conclusion is that the Schwarzschild metric cannot well explain anomaly on Mercury's orbit anomaly, the rationality of the PPN approximation should be further studied. So far, the retarded gravitational theory, considering the contribution of relative velocity and acceleration between the gravitational source and observer, may give a most reasonable and complete explanation on the anomaly of Mercury's orbit with a most clear physical picture.

【ABSTRACT】: approximation and retarded gravitation. The conclusion is that the Schwarzschild metric cannot well explain anomaly on Mercury's orbit anomaly, the rationality of the PPN approximation should be further studied. So far, the retarded gravitational theory, considering the contribution of relative velocity and acceleration between the gravitational source and observer, may give a most reasonable and complete explanation on the anomaly of Mercury's orbit with a most clear physical picture.

【KEYWORDS】: Mercury's orbit anomaly, Newton's law of gravity, Schwarzschild orbit equation, PPN approximation, Schwarzschild orbit equation

【ADDRESS】: kytang@bao.ac.cn

【全文文件】: [水星轨道异常: 几种引力理论之比较-20141105.pdf](#)

[返回](#)

目前没有评论内容