
A new Earth's post-Newtonian long-term precession model

Kai Tang^{*1}, Michael Soffel², Jinhe Tao¹, and Zhenghong Tang¹

¹Shanghai Astronomical Observatory, , Chinese Academy of Science – China

²Technische Universität Dresden = Dresden University of Technology – Germany

Abstract

A new post-Newtonian long-term precession model for the Earth was provided by Tang et al. (2021). It improved the deficiencies in our previous works, which involved an ambiguous ecliptic in the GCRS. This new long-term precession did not refer to any ecliptic. The translational motion of the Solar system bodies was obtained in the BCRS, whose axes are oriented to match the ICRS. The rotational motion of the Earth was calculated in the corresponding GCRS. Approximate expressions for the ecliptic-independent precession parameters were obtained and provided. And the relativistic influences were analyzed. Now, more details of this work are presented here.

*Speaker