

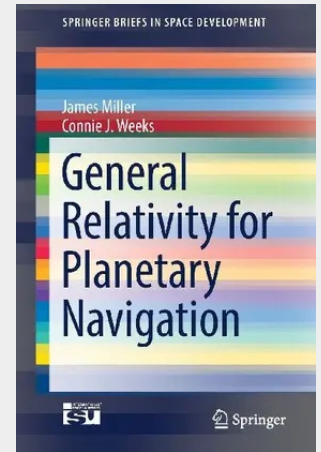
General Relativity for Planetary Navigation

This brief approaches General Relativity from a planetary navigation perspective, delving into the unconventional mathematical methods required to produce computer software for space missions. It provides a derivation of the Einstein field equations and describes experiments performed on the Near Earth Asteroid Rendezvous mission, spanning General Relativity Theory from the fundamental assumptions to experimental verification.

The software used for planetary missions is derived from mathematics that use matrix notation. An alternative is to use Einstein summation notation, which enables the mathematics to be presented in a compact form but makes the geometry difficult to understand. In this book, the relationship of matrix notation to summation notation is shown. The purpose is to enable the reader to derive the mathematics used in the software in either matrix notation or summation notation. This brief is a useful tool for advanced students and young professionals embarking on careers in planetary navigation.

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