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On gravitomagnetism and the solar system

In 1918, Joseph Lense and Hans Thirring, discovered the gravitomagnetic effect when studied solutions to the Einstein field equations, using the weak field approximation, of rotation systems. They noted that when a body falls towards a massive object in rotation feel a force perpendicular to its movement. The equations that they obtained were similar to Maxwell's Equations of Electromagnetism, now known as Maxwell's equations for gravitomagnetism.

Bearing in mind the concepts and formalism of gravitomagnetics equations, we measure the influence that the Sun exerts on the planets of the solar system, taking into account the gravitomagnetic field that the Sun produces to rotate around the center of mass of the solar system. In addition, we consider the field generated by a sphere rotating around its own axis, taking into account that the current density varies radially, and verified the value of gravitomagnetic force of interaction Sun-Mercury (and the other planets of the solar system), which is the gravitational counterpart to the Lorentz force in electromagnetism.

The intention is to calculate the value of this force in the entire solar system to see if there is any case where the gravitomagnetic force approaches, equals or is greater than the force of Newton's Universal Gravitation.

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