Towards Unification of Sciences
Volume-3, No-1
Institute of Philosophy of Nature

Analysis of cause of excess motion of Mercury at perihelion

Bishnu Charanarabinda Mohanty

Abstract

Often, we come across limitations and deviations of manmade natural laws. Nature does not make any preference or deviation of its universal norm. Limitation of universal law appears when the man-made law is deviated away from the reality of nature. Lack of proper perception to the physical state of space and its role in the dynamics of celestial bodies results in limitation of gravity base dynamics in explaining the excess motion of Mercury at perihelion hence requires alternative justification for the same. The extra nuclear space structure associated with celestial body spines for all rotating celestial bodies and has different spatial velocity under the action of gravity and centrifugal force. The new fluid dynamics operating in the solar system has scope to explain the excess motion of Mercury at perihelion without interpretation of general relativity. Thus, the excess motion is a normal motion in fluid dynamics consideration. The new celestial charge interaction has also a role in the dynamics of the solar system. The consideration of celestial charge interaction, over and above gravity, is quite successful in justifying the perpetual motions of celestial bodies in the solar system therefore has a role in justifying the excess motion of Mercury. This article discusses the likely cause of excess motion of mercury at perihelion by considering the fluid dynamics and celestial charge interaction.

Key Words: *Solar system, Celestial bodies, Motion of mercury at perihelion, fluid dynamics, Celestial charge interaction, action of gravity, Centrifugal force.*

Discussion

An orbital body with equal and opposite forces (gravity and centrifugal force) remains in a floating state and acquires its motion from the spinning fluid where the tangential velocity of the orbital body attains the spinning velocity of its adjacent space fluid. If, somehow, the orbital body is displaced inwardly from its metastable circular orbit then gravity would become more than the centrifugal force and the orbital body would accelerate under the differential force (gravity-centripetal). The increasing rate of inward acceleration would have led the orbital body to fall unto the central body but this doesn't happen because the radial velocity of the orbital body due to radial acceleration is redirected in tangential direction by the sweeping action of spinning extra nuclear

space fluid of the central body thereby increasing the tangential velocity of the orbital body. Hence, the spinning motion of the space fluid has a vital role in reorienting the radial velocity of the orbital body in tangential direction. In this way, the spinning space fluid of the rotating central body is instrumental in justifying the assumption of conservation of angular momentum in close orbit. Again, when the orbital body is displaced radially outward, the centrifugal force would increase to cause centrifugal acceleration but due to the drag from the slow spinning velocity of space fluid of the central body, the orbital velocity drops. Here again, the reduction of velocity justifies conservation of angular momentum. In view of the above fact, any orbital body is subject to a radial oscillation about the metastable circular orbit in the orbital plane. The periodic revolution in the metastable circular orbit when clubbed with a matching period of radial oscillation about the metastable circular orbit makes the elliptical orbit stable. The orbital planes of orbital bodies make small acute angles with the equatorial plane of the central body which imply the orbital body makes an oscillation perpendicular to the equatorial plane of the central body. The periodic revolution of the orbital body when clubbed with the perpendicular oscillation results in the inclination of the orbital plane with the equatorial plane. Similar to reorientation of radial velocity in tangential direction by the spinning space fluid of the central body, the linear oscillatory velocity perpendicular to equatorial plane also get reoriented in tangential direction thereby resulting additional tangential velocity. Thus, the resulting tangential velocity is more than that predictable by considering the radial oscillation of the orbital body alone using conservation of angular momentum. This explains the excess motion of Mercury at perihelion.

All celestial bodies have extra nuclear space structure with charge polarized shell features [1]. The orbital bodies have different fixed orbital distances conforming to the shell position in the charge polarized shells of extranuclear space structure thereby the orbits are discrete similar to the discrete nature of orbits in the atomic system [2]. Though the charge shells are spherical in a uniform background space potential, all orbital bodies are housed in the potential gradient of extranuclear space structure of the central body that deforms to spheroid shape. The internal charge-polarized spherical shells are proportionately deformed. Thus, the extra nuclear space structures of orbital bodies have spheroid shape shell structures. Hence the orbital motion of planets and satellites within the spheroid shells are elliptical. The orbital bodies orbiting in inclined plane execute oscillation perpendicular to the equatorial plane. When the orbital body is swept by the spinning space fluid the velocity component normal to equatorial plane is swept by the spinning space fluid thus increasing the tangential velocity in excess of the consideration of angular momentum. Orbital bodies with larger orbital inclination and higher speed of revolution have greater oscillation velocity perpendicular to equatorial plane. Mercury has very high orbital inclination and small orbital period therefore most likely to exhibit excess motion at perihelion compare to other planets.

Conclusion

The effect of spinning space fluid has a great role in justifying different aspects of orbital motion and has scope explaining the excess motion of mercury at perihelion by proper analysis of fluid dynamics. The fluid dynamic analysis may not require additional theories to justify the same.

Reference

1. https://philosophyofnature.org.in/natural-electric-charge-structure-in-earth-and-its-atmosphere.
2. https://philosophyofnature.org.in/extrapolation-of-bodes-lawtowards-unravelling-the-mysteries-of-the-solar-system.