Review of: "Geodesics as Equations of Motion"

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Potential competing interests: No potential competing interests to declare.

Equation (11) determines in a unique way the precession rate of perihelion in arcseconds per orbital period. Where is the problem? Then, the orbital period must be measured in some reference frame, and it will change slightly if we are at Mercury, Earth or outside the solar system in absence of gravity, but this change is so small that it does not affect the precession rate measured in arcseconds per century. The author mixes the precession rate of perihelion with the Newtonian approximation. He should take into account that if Mercury had a circular orbit, its period can be calculated from Newtonian gravity law and mechanics by using the relativistic dynamical mass, which is equivalent to the calculation with the Schwartzschild metric by using the rest mass. On the other hand, owing to the invariance of the Lagrangian formalism under changes of coordinates, one will find the same phyisical dynamics by using proper time or time measured at a lab at infinite distance from the Sun in absence of gravity. I do not see that the conclusion of the paper must be that Einstein's hypothesis that bodies follow geodesics is untenable. If the author wants to give an alternative hypothesis can do it, but his alternative action should also be invariant under changes of coordinates as the square of the differential of the space-time path lenght is. Otherwise it would be mathematically and physically inconsistent.