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P2.4010 Hamiltonian Formulation of the Non-perturbative Guiding Centre Equation

Tuesday, 9 July 2019 14:00 (2 hours)

See full abstract here:
http://ocs.ciemat.es/EPS2019ABS/pdf/P2.4010.pdf
Guiding Centre theory refers to the problem of finding an exact description for the motion of a charged particle in a given magnetic field. Recently, a new, exact, approach to guiding centre theory has been proposed [1], [2]. In this new approach the guiding centre is defined geometrically as the reference frame in which a particle moves in a closed orbit. Then exact equations are derived, for the motion of the particle in this reference frame, and for the motion of the origin of the reference frame in the laboratory frame. In this work we propose a hamiltonian formulation of these equations, even in the relativistic regime.
References
[1] C. Di Troia, Phys. Plasmas 22, 042103 (2015) [2] C. Di Troia, Journal of Modern Physics 09, No.04 (2018)

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