

Contribution Title: A RESONANCE OF THE CYCLOTRON FREQUENCY
WITH A TIME-PERIODIC SINGULAR FLUX TUBE

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Invited speaker:

YRS seminar: NO

We study the dynamics of a classical charged particle moving on a punctured plane under the influence of a homogeneous magnetic field, and driven by a periodically time-dependent singular flux tube through the hole. For this system we exhibit a resonance effect depending on the frequency of the time-dependent flux tube and on the cyclotron frequency: the cyclotron orbits blow up, and the particle oscillates between the hole and infinity. This observation is supported by an analytic study of two different approximations for small amplitudes of the flux.