

PERIODIC MAGNETIC CURVES ON THE 3-TORUS

ANA-IRINA NISTOR

ABSTRACT. We consider two magnetic fields on the 3-torus obtained from two different contact forms on the Euclidean 3-space. We study when their corresponding magnetic curves are closed. We find periodicity conditions involving the set of rational numbers. As the spectrum of closed geodesics on the torus is analogue to the quantization of the energy levels in models of atoms, we called the obtained condition *the quantization principle*.

This presentation is based on the following paper:

M.I. Munteanu, A.I. Nistor, *On some closed magnetic curves on a 3-torus*, Math. Phys. Analysis Geometry 20 (2017) 2, art. 8.

(A.I. Nistor) Department of Mathematics and Informatics, 'Gh. Asachi' Technical University of Iasi, Bd. Carol I, no. 11A, 700506 Iași, Romania, email: ana.irina.nistor@gmail.com