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## Existence of curves of constant curvature

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A long-standing conjecture of Arnold-Novikov asks whether every Riemannian two-sphere contains, for each  $c > 0$ , a closed embedded curve of constant curvature  $c$ . Such curves correspond to closed orbits of electrons moving under the influence of a magnetic field. I will explain joint work with Liokumovich where we show that any Riemannian surface (not necessarily a two-sphere) contains  $C^{1,1}$  immersions at each value of the curvature, giving weak solutions to Arnold's conjecture.

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