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Daniel Jacob Ketover* (dketover@gmail.com), Fine Hall, Princeton University, Princeton, NJ 08544. *Minimal two-spheres in three-spheres.*

The celebrated theorem of Lusternik-Schnirelman states that for any metric on a two sphere, there are at least three closed embedded geodesics. The corresponding problem for a Riemannian three-sphere asks to find at least four closed embedded minimal two-spheres. The existence of at least one two-sphere was obtained by Leon Simon and Francis Smith in 1983. I'll explain my joint work with Haslhofer, in which we proved the existence of a second minimal two-sphere. The proof uses many recent developments in min-max theory and mean curvature flow. It also leads to the existence of minimal non-planar two-spheres in ellipsoids in \mathbb{R}^4 , answering a question of Yau. (Received September 25, 2017)