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Andres Larrain-Hubach* (andreslh83@gmail.com), 617 N Santa Rita Ave, Office 315, Tucson, AZ 85721. *Instantons on Taub-NUT Spaces.*

The Yang-Mills Equations is a system of partial differential equations used in physics to study weak and strong nuclear interactions. In mathematics, these equations allowed Atiyah, Donaldson, Witten and others to discover fascinating topological and geometrical properties of low-dimensional manifolds. After giving basic definitions and explaining the general set-up, I will describe some recent joint work with Sergey Cherkis and Mark Stern concerning properties of solutions of Yang-Mills equations over an important class of four-manifolds called Taub-NUT spaces. (Received September 13, 2015)