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Taylor Dupuy* (dupuy@math.ucla.edu), **James Freitag** and **Lance E Miller**. *Arithmetic
Kolchin Irreducibility*.

The Kolchin Irreducibility theorem states that the arc space (infinite order tangent space) of an irreducible variety is irreducible. This is particularly interesting given how singular irreducible varieties have "messed up" tangent spaces at finite order leading to multiple components. We will talk about recent work concerning arithmetic variants of this theorem. (Received February 09, 2014)