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Mahir Bilen Can* (mcan@tulane.edu), 6823 St. Charles Ave, Department of Mathematics, Tulane University, New Orleans, LA 70118, and **Selman Akbulut**. *Complex G_2 and associative grassmannian*. Preliminary report.

In this talk we will report on our recent progress on the moduli of quaternion subalgebras of a complex octonion algebra. It turns out that this variety is the unique smooth spherical compactification of $G_2/SO(4)$ with Picard number 1. By using techniques from calibrated geometries, we describe its defining ideal in the projectivization of 3-forms on \mathbb{C}^7 and study various $SL(2)$ actions. We calculate its Poincare polynomial by using Bialynicki-Birula decomposition. Finally, we contrast our results with other compactifications of the symmetric variety $G_2/SO(4)$. (Received February 01, 2016)