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Ustun Yildirim* (ustun@mailbox.org). *On the Minimal Compactification of the Cayley Grassmannian.*

In 1967, Brown and Gray showed that an exceptional (r-fold) cross product exists only for $r=2$ in dimensions 3 and 7 and for $r=3$ in dimensions 4 and 8. Using these exceptional cross products, we can identify special subvarieties of Grassmann varieties in dimensions 7 and 8. They are called associative and Cayley Grassmannian respectively. These Grassmannians are of natural interest in calibrated geometry: The tangent spaces of calibrated submanifolds (absolutely volume minimizing submanifolds in their homology classes) lie in these Grassmannians.

Over complex numbers, these Grassmannians are not compact. In this talk, after I talk about the necessary background, I will explain some of the results I obtained on the minimal compactification of Cayley Grassmannian. (Received February 11, 2018)