1067-54-1385 **Aden O Ahmed*** (aden.ahmed@tamuk.edu), Department of Mathematics, MSC 172, 700 University BLVD, Kingsville, TX 78363-8202. *The Topological Structure of the Unit Octonions and the Quantum Theory of Games.*

We exploit the topological structure of the unit octonions in a quantized version of three player, two strategy games. The structure we exploit is a generalization of the usual "wedge" or "1-point union" of spheres to a construction where our family of spheres all intersect in a common sphere of lower dimension, a construction we call a "posy" of spheres. In the case of the octonions, such arise naturally among the many quaternionic subspaces embedded in the octonions. We find particular use for three embedded copies of the unit quaternions S3 that in the unit octonions S7 meet in a common copy of the unit complexes S1. (Received September 20, 2010)