Regular Embeddings of Generalized Hexagons

Anja Steinbach and Hendrik Van Maldeghem

Abstract. We classify the generalized hexagons which are laxly embedded in projective space such that the embedding is flat and polarized. Besides the standard examples related to the hexagons defined over the algebraic groups of type $G_2$, $3D_4$ and $6D_4$ (and occurring in projective dimensions $5, 6, 7$), we find new examples in unbounded dimension related to the mixed groups of type $G_2$. 