

Lagrangian submanifolds of the complex quadric

Joeri van der Veken¹

¹ KU Leuven

The complex quadric Q^n is the complex hypersurface of complex $(n + 1)$ -dimensional projective space given in homogeneous coordinates by the equation $z_0^2 + z_1^2 + \dots + z_{n+1}^2 = 0$. This manifold inherits a Kähler structure from the complex projective space, carries a family of non-integrable almost product structures and its curvature can be relatively easily described in terms of these two. Moreover, Q^n is the natural target space when considering the Gauss map of a hypersurface of a round sphere. In fact, such Gauss maps are related to minimal Lagrangian submanifolds of Q^n . We will discuss this relation, in particular for isoparametric hypersurfaces of spheres, and then study minimal Lagrangian submanifolds of Q^n , obtaining examples and some classifications, such as that of minimal Lagrangian submanifolds of Q^n with constant sectional curvature.