Abstract:

The c-projective metrizability equation is an invariant overdetermined linear geometric PDE on an almost c-projective manifold governing the existence of quasi-Kähler metrics compatible with the c-projective structure. I will show that the degeneracy locus of a solution to the c-projective metrizability equation satisfying a generic condition on its prolonged system is a smoothly embedded submanifold of codimension 1 which inherits a partially-integrable nondegenerate almost CR structure. Phrased differently, this result explicitly links the Levi-form of the boundary CR structure of a c-projectively compact quasi-Kähler manifold satisfying a non-vanishing 'generalized scalar curvature' condition to the interior metric.