

CR GEOMETRY AND ANALYSIS

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Abstract: This talk will be an overview of some relations between the geometry and analysis of CR structures in three dimensions. The subject began with Poincare's observation that in 2-dimensional complex space there are more real hypersurfaces through a given point than there are local biholomorphisms leaving that point fixed. Elie Cartan then computed the geometric invariants that solve the local equivalency problem. Hans Lewy studied Cartan's work, in particular the partial differential operator on the hyperquadric and its relation to the underlying geometry. This led to his famous counterexample - a linear partial differential equation with no solution. The talk will conclude with the realization problem and a false analogy.