

NORDAN 2016: Several Complex Variables

Automorphism groups of Levi degenerate hypersurfaces in \mathbb{C}^3

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We give a classification of smooth real hypersurfaces of finite Catlin multitype in \mathbb{C}^3 which admit nonlinear infinitesimal automorphisms. The results are complete on the level of weighted homogenous polynomial models. As a consequence, we prove a sharp 1-jet determination result in the general case. We also identify a common source of such vector fields. They all arise by pulling back a symmetry of a suitable hyperquadric in \mathbb{C}^K , $K \geq 3$, by a holomorphic mapping from \mathbb{C}^3 to \mathbb{C}^K . This is a joint work with Martin Kolar.