Title: Classification of non-degenerate projective submanifolds with non-zero prolongation

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Abstract: The prolongation of a linear Lie algebra plays an important role in the study of symmetries of G-structures. Cartan and Kobayashi-Nagano gave a complete classification of irreducible linear Lie algebras with nonzero prolongations. If the linear Lie algebra is the Lie algebra of infinitesimal linear automorphisms of a projective submanifold of projective space, its prolongation is related to the symmetries of cone structures. In a joint work with Baohua Fu, we give a complete classification of irreducible nondegenerate projective submanifold with non-zero prolongation of the Lie algebra of infinitesimal linear automorphisms, generalizing the result of Cartan and Kobayashi-Nagano to the setting of projective algebraic geometry.