

SPECIAL GEOMETRIC STRUCTURES AND SYMMETRIES

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ABSTRACT. The point of this talk is to explain some ideas about the rich geometry of spaces with smooth symmetries. We first discuss group actions using a concrete three-dimensional example. Then we move to a six-dimensional framework. We shall focus on a special class of Riemannian geometries, i.e. nearly Kähler manifolds, and see how imposing torus-symmetry helps us understand their structure. We will see connections with symplectic geometry, moment maps, equivariant cohomology, and GKM graphs.