

NORDAN 2016: Several Complex Variables

An Oka principle for simultaneous standardization of n-tuples of points

Frank Kutzschebauch

University of Bern, Switzerland

It is an easy exercise to show that the holomorphic automorphism group $Aut_{hol}(\mathbb{C}^n)$ $n \geq 2$ acts transitively on ordered N-tuples (z_1, z_2, \dots, z_N) of pairwise disjoint points in \mathbb{C}^n . If the points depend holomorphically on a Stein parameter $w \in W$ we ask whether the automorphism of \mathbb{C}^n moving the N-tuple $(z_1(w), z_2(w), \dots, z_N(w))$ to a fixed N-tuple (z_1, z_2, \dots, z_N) can be chosen holomorphically depending on the parameter w . We prove an Oka principle saying that the obstruction for this is of purely topological nature. Our theorem (which is true not only for \mathbb{C}^n but for any Stein manifold with the density property) can be interpreted as a result similar to Grauert's Oka principle, but instead for the principal bundle of a complex Lie group in Grauert's case for a principal bundle of certain infinite-dimensional Frechet groups in our case. This is a joint work with Ramos Peon.