

# HOLOMORPHIC MOTIONS AND COMPLEX DYNAMICS

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In complex dynamics we observe remarkable phenomena of geometric stability: When the parameters of a (hyperbolic) rational map are perturbed, the Julia sets not only preserve their topological properties but also much of their geometry. Holomorphic motions is a notion that explains these and other stability phenomena in complex dynamics.

This mini course gives an exposition of the fundamentals of holomorphic motions. In the first lecture we discuss various examples and introduce the necessary concepts from dynamics (such as holomorphic motions) and geometry (such as quasi-symmetric mappings).

The second lecture discusses the Mane-Sad-Sullivan "Lambda-lemma" and its consequences in complex dynamics. The last lecture describes a proof of Slodkowski's celebrated extended Lambda-lemma.