STEIN MANIFOLDS AND AUTOMORPHISMS OF COMPLEX EUCLIDEAN SPACES

ERLEND FORNÆSS WOLD

1. Program

This PhD course is based on 24 hours of lectures. The aim of the course is to present the basics of Stein manifolds and automorphisms of $\mathbb{C}^n$, $n \geq 2$. In particular we aim to explain Fatou-Bieberbach phenomena, Andersén-Lempert theory, approximation theory, and application, and discuss some open problems in the area. An outline of the course is the following:

(1) Domains of holomorphy,
(2) the $\overline{\partial}$-problem,
(3) Stein neighborhoods and holomorphic approximation,
(4) shears,
(5) automorphisms of $\mathbb{C}^n$,
(6) attracting basins and Fatou-Bieberbach domains,
(7) the Andersén-Lempert theorem,
(8) moving polynomially convex compact sets,
(9) moving totally real sets,
(10) automorphisms with give jets,
(11) twisted holomorphic embeddings,
(12) tail spaces and the Bedford conjecture,
(13) non-Runge Fatou-Bieberbach domains and long $\mathbb{C}^n$'s,

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