



THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Seminar in Geometry and Topology

Room 208 ,Elaine and Bram Goldsmith Building
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at 16:00

Ilya Kossovskiy
Masaryk University

On the Gevrey regularity of CR-mappings

Abstract:

Cauchy-Riemann maps (shortly: CR-maps) occur in complex analysis as boundary values of maps holomorphic in a domain in complex space. As a rule, CR-mappings of real-analytic hypersurfaces appear to be analytic as well. However, we recently showed in a joint work with Rasul Shafikov the existence of Stokes Phenomenon in CR-geometry: there exist real-analytic hypersurfaces, which are equivalent formally, but not holomorphically.

Despite of this, it appears that in complex dimension 2, CR-maps necessarily possess appropriate weaker regularity properties. Namely, components of such maps necessarily belong to the well known Gevrey classes. The latter statement has the following remarkable application: if two real-analytic hypersurfaces in complex two-space are equivalent formally, then they are also equivalent smoothly. The proof of all these facts employs the recent multi-summability theory in Dynamical Systems. It as well employs the recent CR-DS technique that we developed, which connects CR-manifolds and certain Dynamical Systems. In this talk, I will outline the technique, as well as some details of the proof.