

VIRTUAL EAST-WEST SCV SEMINAR

November 30, 2021

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COMPLEX GEODESICS IN TUBE DOMAINS AND THEIR ROLE IN THE STUDY OF HARMONIC MAPPINGS IN THE DISC

The continuation of the research initiated by S. Zajac on the structure of complex geodesics in tube domains over (bounded) convex bases will be presented. In some special cases a more explicit form of the geodesics than the existing ones are provided. As one of the consequences of the study an effective formula for the Kobayashi-Royden metric in the tube domain over the unit ball at the origin is given. The results on the Kobayashi-Royden metric in a natural way provide versions of the Schwarz Lemma for harmonic mappings. A result on harmonic mappings defined on the disc that may be seen as a generalization of the Rad-Kneser-Choquet Theorem for a class of harmonic bivalent mappings that lets understand better the geometry of complex geodesics in tube domains will also be presented.
