Announcement

Seminar on Deformation Quantization and Geometry

12. 7. 2024 at 14:00 s.t.

Seminarroom SE 31

Niklas Rauchenberger (JMU Würzburg)

Endpoint Geodesic Formulas for the Special Euclidean Group

The special Euclidean group SE_n is the semidirect product of the special orthogonal group SO_n and the vector space $\mathbb{R}^n$. It is a Lie group of great interest in many applications such as theoretical mechanics, robotics or computational anatomy. In this talk, the endpoint geodesic problem on the special Euclidean group will be discussed, i.e., the boundary value problem of finding geodesics that connect two given points on SE_n. We derive closed formulas for this curves that only depend on the given data by embedding the special Euclidean group into a bigger vector space. This leads to an equation involving so-called normal space involutions from which we can solve the endpoint geodesic problem explicitly.

Invited by Stefan Waldmann