

# Oberseminar Geometrie und Topologie

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## Spectral uniqueness of bi-invariant metrics on symplectic Lie groups

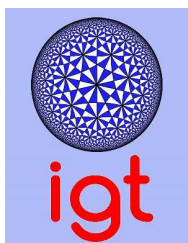
**1. Februar 2018 - 16 Uhr**

**Seminarraum IGT, Raum 7.530, Pfaffenwaldring 57**

Abstract:

Two compact Riemannian manifolds are called isospectral if their associated Laplace-Beltrami operators have the same spectra. There exist in the literature a considerable amount of pairs and families of non-isometric isospectral Riemannian manifolds. However, it is expected that Riemannian manifolds with very nice geometric attributes are spectrally distinguishable, that is, isospectrality implies isometry for them. This talk concerns the case of Riemannian symmetric spaces.

The above problem is very complicated in full generality, so it is usual to restrict the space of metrics. Gordon, Schüth, and Sutton in 2010 raised the question of whether a symmetric space given by a semisimple compact Lie group  $G$  endowed with a bi-invariant metric is spectrally distinguishable within the space of left-invariant metrics on  $G$ . A full answer was known only for 3-dimensional compact Lie groups. We will show that the question is affirmative for every symplectic group  $Sp(n)$ .



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