
Student Geometry Seminar

國立清華大學數學系 學生幾何研討會

講題 Hochschild-Kostant-Rosenberg theorem for manifolds

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Abstract

The Hochschild-Kostant-Rosenberg (HKR) theorem for differentiable manifolds states that the continuous Hochschild homology of the algebra of smooth functions on a manifold is isomorphic to the space of differential forms. In this talk, we will first review the definition of Hochschild homology in the smooth setting and then outline a proof of the HKR theorem.

The proof relies on a homotopy operator that localizes the Hochschild homology to the diagonal. In particular, we will see that Hochschild homology can be computed via three different chain complexes: those constructed from smooth functions, and from the germs and jets along the diagonal, respectively.

