

SPEAKER: Martin Raum (Chalmers Univ. of Technology, Sweden)

TITLE: Moduli of flat surfaces and affine modular forms

ABSTRACT: Based on work with Jayadev Athreya, Jean Lagacé, and Martin Möller.

I give a quick overview of the relation between moduli of two-marked tori and modular forms for a special affine group action, which is non-reductive and thus outside of reach of the Langlands Program. The connection is made by the Siegel-Veech transform, which I will also sketch. In general, the Siegel-Veech transform yields a supply of square-integrable functions on strata of abelian differentials, of which moduli of marked tori are a special case. Before our work, only the case of one-marked tori which corresponds to a special linear group was understood. In particular, even in the case of two-marked tori spectral properties of the image were unknown. We obtain a surprisingly detailed understanding of the L^2 -space, surpassing what we know for the special linear groups.