

# Eisenstein cohomology and Franke filtration

(Talk)

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The cohomology of an arithmetic subgroup  $\Gamma$  of a reductive group  $G$  defined over a number field can be expressed in terms of automorphic forms with respect to  $\Gamma$ . In the adèlic setting this cohomology can be recovered from the so-called automorphic cohomology of  $G$ , that is, the relative Lie algebra cohomology of the space of automorphic forms on  $G(\mathbb{A})$ . The decomposition of the space of automorphic forms along the cuspidal support gives rise to the corresponding decomposition of the automorphic cohomology. We report in this talk on the joint work with J. Schwermer on the vanishing conditions for individual summands in the decomposition of automorphic cohomology for classical groups, and the joint work with H. Grobner on the computation of those summands for the rank two split symplectic group  $Sp_4$  using the Franke filtration of the space of automorphic forms.

MSC2010: 11F75, 22E55, 11F70, 22E40.

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