SPEAKER: Martin Raum (Max Planck Institute for Mathematics)

TITLE: Sesquiharmonic modular forms and non-critical L-values

ABSTRACT: Non-critical L-values of a holomorphic elliptic modular form can be incorporated into a formal generating function. The one-sided, non-convergent Taylor expansion at 0 of a certain function, defined on the Poincaré upper half plane, equals this generating series. We introduce sesquiharmonic modular forms. Like harmonic modular forms, their Fourier expansions admit a decomposition into canonical pieces; the holomorphic, the harmonic, and the non-harmonic part. The deformation deficit of the second part equals the above function on the upper half plane. Starting with this observation, we develop a theory paralleling the classical Eichler-Shimura theory.