

THETA LIFTS AND ARITHMETIC ASPECTS OF AUTOMORPHIC FORMS

This course explores theta liftings of modular forms, from classical constructions by Shimura and Shintani to Borcherds lifts and their modern extensions. Emphasis will be placed on geometric and arithmetic applications, including the Gross-Zagier formula and recent results on traces of cycle integrals and CM values of modular forms. The aim is to highlight how theta lifts connect modular forms with arithmetic geometry.