

Hyperbolic Kac-Moody algebras and automorphic forms

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In this talk, we will consider automorphic forms attached to hyperbolic Kac-Moody algebras. The denominator function of a hyperbolic (or more generally, Lorentzian) Kac-Moody algebra is not an automorphic form. However, we can extend the Kac-Moody algebra to obtain a generalized Kac-Moody superalgebra whose denominator function is an automorphic form. We will explain this process through examples of rank 2 and rank 3 hyperbolic Kac-Moody algebras to obtain some Hilbert modular forms and Siegel modular forms, respectively. This is a joint work with Henry Kim.