Aaron Pollack: *Special automorphic functions on the exceptional groups*

If a reductive $\mathbb{Q}$-group G has a Hermitian symmetric space, then one can examine its holomorphic modular forms. Certain exceptional Dynkin types – namely, G_2, F_4, and E_8 – do not possess a real form whose associated symmetric space is Hermitian. However, Gross and Wallach singled certain real forms of the exceptional groups and a class of automorphic functions on them which can take the place of the holomorphic modular forms. I will define these special automorphic functions and explain what is known about them. In particular, these ”exceptional modular forms” possess a robust Fourier expansion, similar to the holomorphic modular forms, and one can produce examples of these modular forms all of whose Fourier coefficients are integers.