

Tuesday, October 8th @ 2pm
Schwinger Lounge

“Black holes from weak Jacobi forms”

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Abstract: In this talk I will revisit the connection between modular forms and black hole entropy. I will introduce the notion of a weak Jacobi form (wJf), and use modular crossing kernels to extract asymptotic expansions of the Fourier coefficients of wJfs. When combined with conditions inspired by AdS/CFT we find a broad range of parameters in which the leading order behaviour is universal and Cardy-like, while the first sub-leading logarithmic correction depends on the “light” data of the wJf. When there is a dual gravity description we can match the asymptotic expansion to the black hole entropy. By doing so we find a precise microscopic interpretation to the logarithmic corrections to the entropy of BPS black holes in $N=2,4$ ungauged supergravity in four and five dimensions.