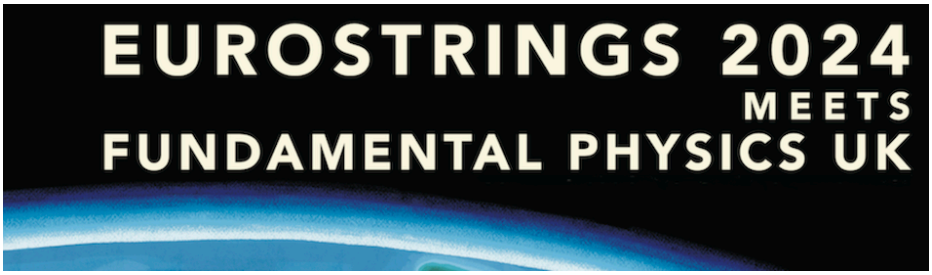

Contribution ID: **186** Type: **Talk in parallel session**

The light we can see: Extracting black holes from weak Jacobi forms

Monday 2 September 2024 14:00 (30 minutes)

Modular forms play a pivotal role in the counting of black hole microstates. The underlying modular symmetry of counting formulae was key in the precise match between the Bekenstein-Hawking entropy of supersymmetric black holes and Cardy's formula for the asymptotic growth of states. The goal of this talk is to revisit the connection between modular forms and black hole entropy, and tie it with other consistency conditions of AdS/CFT. We will focus our attention on weak Jacobi forms. I will quantify how constraints on polar states affect the asymptotic growth of non-polar states in weak Jacobi forms. The constraints I'll consider are sparseness conditions on the Fourier coefficients of these forms, which are necessary to interpret them as gravitational path integrals. In short, the constraints will leave an imprint on the subleading corrections to the asymptotic growth of heavy states. With this we will revisit the UV/IR connection that relates black hole microstate counting to modular forms. In particular, I'll provide a microscopic interpretation of the logarithmic corrections to the entropy of supersymmetric black holes and tie it to consistency conditions in AdS_3/CFT_2.

Link to publication (if applicable)

Presenter: CASTRO, Alejandra

Session Classification: Parallel sessions