



INVITATION

as part of the Mathematical Physics Theory Seminar

to the talk by

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on

“Quivers and black holes”

Abstract:

In this talk, I will discuss how quasinormal modes of certain black holes can be studied utilising the two-dimensional conformal field theory (2D CFT) and their connection to four-dimensional $N=2$ supersymmetric field theories. This serves as an example of the interesting interplay between black hole physics, 2D CFTs, and 4D $N=2$ theories, where insights from one domain illuminate the others. We will review the correspondences and the dictionaries. I will show how to solve the connection problem of second-order linear ODEs of Fuchsian type coming from quiver gauge theories or corresponding black hole perturbation theories in terms of the crossing symmetry of the 2d CFT. This is a generalization of the Heun case studied in Bonelli-Iossa-Lichtig-Tanzini. In particular, the connection coefficients are expressed in terms of a special function defined in 4D $N=2$ theories, which is the Nekrasov-Shatashvili function. We will show an example of the 2nd order ODE with 5 regular singularities and its application to scalar perturbations Schwarzschild-AdS7 black hole.

Time: Tuesday, 27 May 2025, 2:00 p.m.

Location: Erwin-Schrödinger Lecture Hall, 1090 Vienna, Boltzmannngasse 5, 5th floor