Black hole physics from AGT correspondence

Daniel Panea Lichtig (SISSA)

Abstract

Following recent developments relating the physics of black holes in GR to the Seiberg-Witten geometry of N=2 gauge theories, we exploit the AGT correspondence to reformulate the questions in the language of 2d CFT. This interplay between structures in CFT and gauge theory enables us to obtain exact results on several physical quantities of interest on the gravity side such as quasinormal modes, greybody factors modifying the Hawking radiation and Love numbers, which are of phenomenological interest regarding recent observations of black hole mergers.