Flat-Space Holography and Stress Tensor of Kerr Black Hole[1]

YOUSEF IZADI, Kansas State Univ, REZA FAREGHBAL, OMID BAGHCH-
ESARAEI, Shahid Beheshti University Tehran Iran — According to the AdS/CFT
correspondence, gravity in an asymptotically AdS spacetimes has a conformal field
theory dual. One of the perplexing concepts in theoretical physics is obtaining a
comprehensive understanding of holography. To this end, it is of interest to explore
whether holography exists beyond the known example of the AdS/CFT correspon-
dence and for spacetimes other than the AdS. A correspondence has recently been
proposed between asymptotically flat spacetimes and a contracted conformal field
theory and it is known as Flat/CCFT. This correspondence will be reviewed. Then
using Flat/CCFT dictionary by taking the flat limit from quasi-local stress ten-
sor of four-dimensional Kerr-AdS black hole, a stress tensor for Kerr black hole in
Boyer-Lindquist coordinate can be calculated. The proposed stress tensor yields the
correct values for the mass and angular momentum of the Kerr black hole in spatial
infinity and it is another confirmation for Flat/CCFT proposal.

[1]Department of Physics, Kansas State University

Yousef Izadi
Kansas State Univ