Holographic information measures in Einstein-Maxwell-dilaton model with non-local effect

M R Mohammadi Mozaffar[1] and M H Vahidinia[2*]

1. Department of Physics, University of Guilan, P.O. Box 41335-1914, Rasht, Iran
2. Institute for Advanced Studies in Basic Sciences (IASBS), P.O. Box 45137-66731, Zanjan, Iran

E-mail: vahidinia@ipm.ir

Abstract
We study several holographic entanglement measures in a specific Einstein-Maxwell-dilaton theory using gauge/gravity correspondence. In particular, we evaluate the holographic entanglement entropy, mutual information, and entanglement wedge cross-section in geometries that are dual to the boundary vacuum state. Our results reveal some generic properties of boundary information measures dual to the entanglement wedge cross-section, e.g., the entanglement of purification. We show that the critical separation for the transition of mutual information increases as we increase the non-locality parameter, hence the total correlation between the subsystems increases.

Keywords: holography, gauge/gravity correspondence, entanglement, nonlocality

For full article, refer to the Persian section