

Near-extremal black hole of radius R and $T \ll 1/R$ from 4D Einstein-Maxwell

\implies 2D Einstein-Maxwell with a scalar field (fluctuations of black hole radius)

\implies Absence of 2D quantum gravity fluctuations: reduction to (0+1)D

\implies (0 + 1)D theory is *precisely the Schwarzian theory of the SYK model.*