Future plans

I will study the MAE in the Einstein-Maxwell theory or p-form theory in more general setup. The inclusion of the negative cosmological constant is also interesting. In AdS cases, the application to AdS/CFT correspondence is expected. For the first step, I will derive the blackfold equation for the charged case through the analysis of the dipole perturbation. Another extension is the higher order corrections. There are still no calculation for the higher order correction of the MAE-constructed black rings. The general understanding of higher order corrections in the MAE method is also important. Higher order corrections will be also required for checking the dynamical stability of MAE-constructed solutions.

The numerical calculation is necessary for the regions in which the above perturbative approximation breaks down, and it will be also helpful to study the merger of the phases. The recent numerical calculation of rotating black rings by Kleihaus et.al. will be a great help.

Using both approaches, I will reveal the phase diagram for higher dimensional black holes.