

Brane-localised Extreme black hole

Department of Physics, Kyoto University
Ryotaku Suzuki

Collaborator : Tetsuya Shiromizu (Kyoto U)
Tanahashi Norihiro(UC Davis)

R. Suzuki, T. Shiromizu and N. Tanahashi,

“Extreme charged black holes in braneworld with cosmological constant”

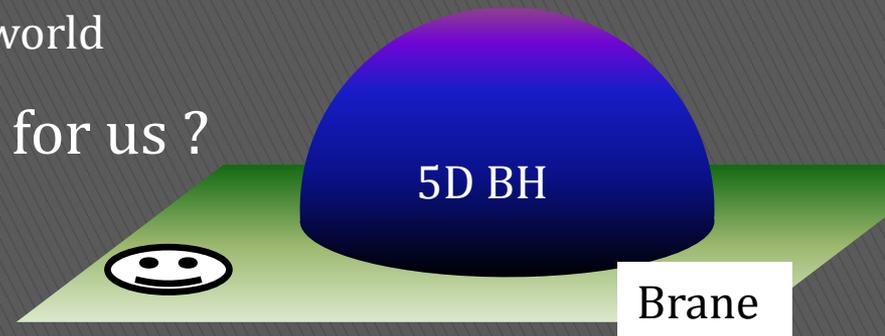
(arXiv:1007.1820, to be published in PRD)

Braneworld Black hole

Our Universe is (possibly) described by braneworld

What is the black hole observable for us ?

⇒ Brane-localised black hole



Static solution of such black hole is **not** found!

Classical Black hole Evaporation

(Tanaka,2003, Emparan,2003)

⇒ **No** Static black hole solution localised on the brane

Valid only when BH radius \gg AdS curvature scale

Current (Successful) Approach to BW Black hole

Numerical Solution of “Small” Black hole(Kudoh, Nakamura, Tanaka, 2003)

Initial data of Dynamical Black hole(Tanahashi, Tanaka, 2007)

We take another approach!

Why Extreme ?

Kaus & Reall 's Idea

No Hawking rad \longleftrightarrow AdS/CFT \longleftrightarrow static 5D BH

Hawking Temperature = 0 (Extreme BH)
 \Rightarrow static solution exist ?

Kaus and Reall, 2009 : Flat brane case

Our Work

Analyse **the Effect of Cosmological constant** on extreme BH on the brane with Cosmological constant

Motivation

- find **new static solution** of BW black hole
- Check AdS/CFT through Braneworld model

For details.
Visit our poster !