

Contribution ID: 2204 Type: Oral (Graduate Student) / Orale (Étudiant(e) du 2e ou 3e cycle)

Gradient Flow in Holographic Superconductors (G)

Wednesday 13 June 2018 09:15 (15 minutes)

The AdS/CFT correspondence provides an equivalence between a gravity theory in some bulk anti-deSitter spacetime and a conformal field theory (CFT) in one fewer dimensions on the boundary. A superconductor that can be described by a gravity theory through this correspondence is referred to as a 'holographic super-conductor'. Gradient flow equations will evolve any given initial field configuration towards one that is a solution to the equations of motion, this allows us to study stability of solutions as well as the behavior of a system far from equilibrium. Through the AdS/CFT correspondence, the gradient flow in the gravity theory should have a corresponding flow in the CFT and vice-versa. We focus on the flow of the matter fields in a gravity theory containing a black hole and a charged scalar field. In this system the flow equations move the system from a configuration with no scalar hair to a hairy black hole solution. We study the corresponding flow on the boundary superconducting theory, where a normal metal state transitions to a superconducting state.

Author: MIKULA, Paul (University of Manitoba)
Presenter: MIKULA, Paul (University of Manitoba)
Session Classification: W1-5 Fields and Strings I (DTP) | Champs et cordes I (DPT)

Track Classification: Theoretical Physics / Physique théorique (DTP-DPT)