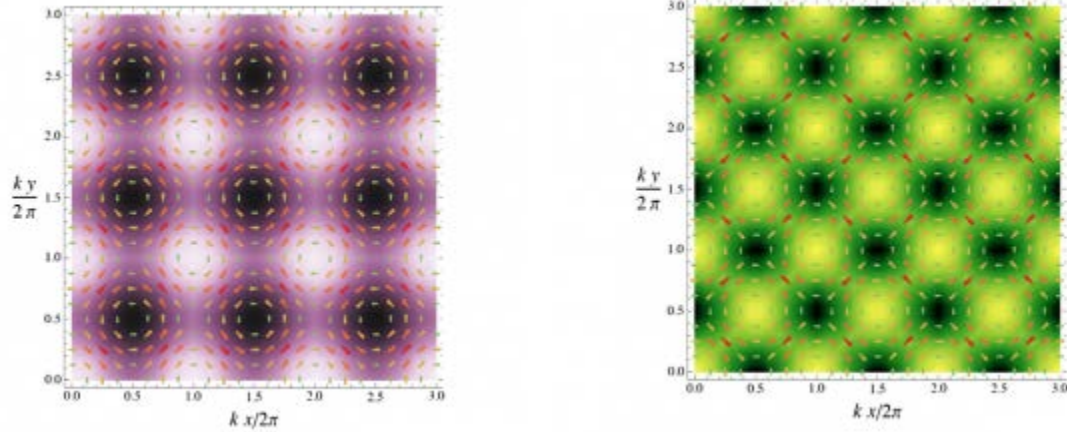


Intertwined order and the Rasta Black hole hair.



[The “intertwined order”](#) in underdoped cuprates is seemingly impossible to understand in conventional (“unentangled”) mean field theory.

On the gravitational side, it used to be a dogma that black holes do not have hair. However, black holes can have hair in AdS asymptotics and order in the boundary turns out to be dual to such hair. The study of such hair has become a novel branch of GR showing that it is generically a quite rich, complex affair.

Amazingly, this dualizes in boundary order that has many traits in common with the intertwined order observed in the cuprates. In particular, we demonstrate that pair density waves are a natural part of this agenda. **In the left figure** the charge density modulation is shown together with the pattern of diamagnetic orbital currents, and **the right figure** the concomitant pair density wave.