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Pomeranchuk instability from a black hole[1] KA WAI LO, University of Illinois at Urbana Champaign, MOHAMMAD EDALATI, University of Texas at Austin, PHILIP PHILLIPS, University of Illinois at Urbana Champaign — Within the AdS/CFT correspodence, we introduce a probe spinor field and a neutral symmetric traceless spin-two field which are dual to a fermionic operator and a neutral tensor order parameter in the boundary field theory. By considering a certain coupling between the two probe fields, we show that a transition induced by condensation of the neutral order parameter dual to the neutral spin-two field can lead to the breaking of rotational symmetry of Fermi surface and hence a Pomeranchuk instability. The critical properties of this transition are computed.

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