Disorder in Holography

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The interplay of disorder and strong interactions is a challenging open problem in Theoretical Condensed Matter Physics. It has far reaching implications ranging from the study of disordered fixed points to the phenomenology of High $T_c$ Superconductors. We will tackle this problem by constructing holographic duals of superconductors in the presence of a disordered chemical potential. These gravity duals will consist in highly inhomogeneous charged black hole geometries. Those duals will allow us to determine interesting observables like the transport coefficients of a strongly coupled disordered superconductor. Finally, if time permits, we will try to study the low temperature limit of the disordered geometries with the goal of exploring the disordered fixed points that might be the ground state of our system.