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Title: A theory of the underdoped cuprate superconductors

A remarkable picture of the underdoped cuprates has emerged from recent quantum oscillation, high field transport, photoemission, and STM experiments. A central feature is the "nodal-anti-nodal dichotomy", the distinct behavior of the electronic excitations in different regions of the Brillouin zone. I will present a theory which builds upon the instabilities of a novel quantum phase called the "algebraic charge liquid". This phase has Fermi surfaces of carriers with both charge $+e$ and $-e$, which interact strongly via an emergent collective gauge force. I will show how this theory leads naturally to a d-wave superconductor with very different pairing properties in the nodal and anti-nodal regions of the Brillouin zone.