

Abstract Submitted  
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**On the origin of quantum criticality found at finite doping in 2D Hubbard model**<sup>1</sup> SHUXIANG YANG, HERBERT FOTSO, JUANA MORENO, MARK JARRELL, Louisiana State University — To better understand the excitations responsible for quantum criticality (QC) found at finite doping in the 2D Hubbard model, we analyze the vertices for different scattering channels obtained from the Dynamical Cluster Continuous-Time Quantum Monte Carlo simulation. By decomposing these vertices using the parquet equations we find that both superconductivity and the charge instabilities responsible for the QC come from the crossed spin channel contribution, and thus are driven by the spin-fluctuations. On contrast, the spin instability comes from the fully irreducible spin vertex contribution.

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