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**Controversial Issues in High-$T_c$ Superconductivity - a Specific Heat Perspective**

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We briefly review specific heat data on the evolution with hole doping of HTS cuprates and discuss the results in terms of current models. We see a universal progression from insulator to overdoped metal via a states-non-conserving approximately V-shaped pseudogap in the qp DOS. The gap shrinks with p due to the accumulation of new spectral weight ($\sim$ 1 state per doped hole) on the shoulders of the pseudogap (the antinodal regions) and closes abruptly close to optimal doping accompanied by a rapid increase in superconducting (SC) condensation energy. Thermodynamic measurements show no features (even broadened) at the temperature T* at which the pseudogap is generally presumed to close, and that the spectral weight loss persists to temperatures well above T*. This suggests that the pseudogap is not due to a Fermi surface instability or precursor SC fluctuations and that the pristine Fermi surface is not restored at T*. Specific heat and NMR measurements also reveal a rather high degree of SC homogeneity, casting doubt on the popular inference of gross SC gap inhomogeneity revealed by some tunnelling studies.