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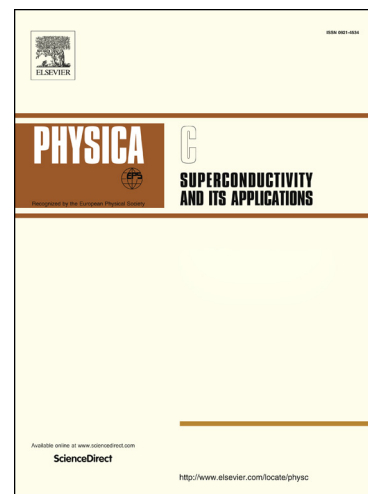
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## Mean-field approach to unconventional superconductivity

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**Abstract**

We propose a model that connects the quasiparticle spectral function of high- $T_c$  superconductors to the condensation energy. Given the evidence for pair correlations above  $T_c$ , we consider a coarse-grain Hamiltonian of fluctuating pairs describing the incoherent pseudogap (PG) state, together with a novel pair-pair interaction term that restores long-range superconducting (SC) coherence below  $T_c$ . A mean-field solution then leads to a self-consistent gap equation containing the new pair-pair coupling. The corresponding spectral function  $A(k, E)$  reveals the characteristic peak-dip-hump features of cuprates, now observed on iron pnictides (LiFeAs). The continuous transition from SC to PG states is discussed.

*Keywords:* Unconventional superconductivity, Pseudogap, Spectral function, Inhomogeneity  
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