

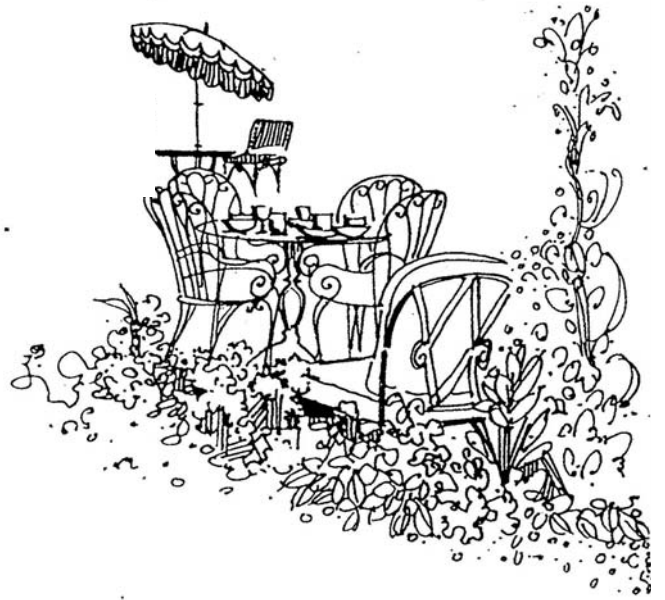
Chez Pierre

Presents ...

Friday, October 9, 2009

12:00pm

MIT Room 4-331



Eduardo Fradkin

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“How the Cuprates Intertwine Charge, Spin and Superconducting Orders”

In the stripe-ordered state of a strongly correlated two-dimensional electronic system, under a set of special circumstances, the superconducting condensate, like the magnetic order, can occur at a nonzero wave vector corresponding to a spatial period double that of the charge order. In this case, the Josephson coupling between near neighbor planes, especially in a crystal with the special structure of $\text{La}_{2-x}\text{Ba}_x\text{CuO}_4$, vanishes identically. We propose that this is the underlying cause of the dynamical decoupling of the layers recently observed in transport measurements at $x = 1/8$ in this cuprate superconductor. We will discuss the phenomenological consequences of this hypothesis as well as the possible microscopic mechanisms for this interesting state as well as what it implies for the cuprate superconductors more generally.