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The Dynamic Hubbard Model: what might be missing in current descriptions of strongly correlated electrons in solids¹
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Electrons move around and they interact with one another via the Coulomb interaction. When electrons form extended (i.e. Bloch) states in metals they do the same thing. Yet very often they form a collective exotic state like superconductivity. Is this the consequence of pairing via an attractive interaction, or is something more subtle at work? This talk will attempt to do several things: (i) present a “state of the union” summary of our understanding of superconductivity, (ii) explain the physics of the Dynamic Hubbard model (DHM) in terms that undergraduates can understand, and (iii) present some results achieved for the DHM.

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