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What does localization mean in interacting systems?

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In 1958, Phil Anderson showed that the wavefunctions of noninteracting particles moving in a random potential can become localized in space. Anderson localization has since been observed in a wide variety of systems. However, interactions between particles aren't always negligible. In fact it is precisely the materials in which electron-electron interactions are most significant that are of the greatest current interest. Moreover, the properties of these materials are usually tuned by doping, which introduces disorder. So how do interactions effect localization? This talk will provide an overview of recent progress towards clarifying what localization means in interacting systems.

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