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### **From FPU to Intrinsic Localized Modes**

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Intrinsic localized modes (ILMs), also known as “discrete breathers,” have been appealing theoretical possibilities for more than a decade. Roughly speaking, they represent the extension of the continuum concept of “solitons” to spatially extended discrete (lattice) systems. Importantly, theory suggests that ILMs are far more ubiquitous than solitons, in that they can occur in discrete systems in any number of spatial dimensions and with a wide range of nonlinear interactions. In the past several years, ILMs have been observed experimentally in physical systems as distinct as charge-transfer solids, Josephson junction arrays, photonic structures, and micromechanical oscillator arrays. Beginning with a brief historical overview of the origin of the concept of ILMs, we focus on their current theoretical and experimental and discuss some exciting possible future directions and applications of these novel nonlinear excitations.