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One Parameter Scaling Theory for Stationary States of Disordered Nonlinear Systems¹ JOSHUA BODYFELT, Max Planck Institute for Physics of Complex Systems, TSAMPIKOS KOTTOS, Wesleyan University, BORIS SHAPIRO, Technion - Israel Institute of Technology — We show that the normalized average participation number of the stationary solutions of disordered nonlinear lattices obeys a one-parameter scaling law. Our approach opens a new way to investigate the interplay of Anderson localization and nonlinearity based on the powerful ideas of scaling theory.

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