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【158】Topological scars

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We propose an exact construction for atypical excited states of a class of non-integrable quantum many-body Hamiltonians in one dimension (1D), two dimensions (2D), and three dimensions (3D) that display area law entanglement entropy. These examples of many-body "scar"states have, by design, other properties, such as topological degeneracies, usually associated with the gapped ground states of symmetry protected topological phases or topologically ordered phases of matter.

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