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Emergence of dynamical edge-state instabilities in 2D interacting bosonic systems BOGDAN GALILO, RYAN BARNETT, DEREK LEE, Imperial College — The emergence of dynamical (edge) instabilities in two-dimensional interacting Boson systems which exhibit edge-states is proposed. In particular, with the Hofstadter model it is shown that a bosonic system can be prepared to have unstable edge states while having stable bulk states. This leads to a fast population of edge-states, a likely observable effect in optical lattice experiments of ultra cold atoms. The presence of a non-trivial topological band structure suggests that the effect might to be robust.

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