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Chern and Majorana Modes in QuasiCrystals INDUBALA SATIJA, George Mason University, GERARDO NAUMIS, Universidad Nacional Autonoma de Mexico — The topology of quasicrystals is found to have a novel manifestation in the spatial profile of band edge states as topological invariants transform peaks into doublets of size equals the Chern number. The Chern-dressed peaks form a self-similar pattern encoding topological fingerprints at all length scales. For quasicrystals exhibiting localized states, fluctuations about exponentially localized zero modes describe the onset to topological transition where Majorana modes delocalize. These exotic modes can be captured in their entirety using $U(1)$ symmetry breaking perturbation that supports both the Chern and the Majorana modes. Here topological transition is accompanied by localization as edge-localized modes move to the interior, loosing topological protection.

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