Localized modes in nonlinear photonic kagome nanoribbons

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We examine localization of light in nonlinear (Kerr) kagome lattices in the shape of narrow strips of varying width. For the narrowest ribbon, the band structure features a flat band leading to linear dynamical trapping of an initially localized excitation. We also find a geometry-induced bistability of the nonlinear modes as the width of the strip is changed. A crossover from one to two dimensions localization behavior is observed as the width is increased, attaining two-dimensional behavior for relatively narrow ribbons.