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Strict and fussy mode splitting in the tangent space of the Ginzburg-Landau equation

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In the tangent space of some spatially extended dissipative systems one can observe "physical" modes which are highly involved in the dynamics and are decoupled from the remaining set of hyperbolically "isolated" degrees of freedom representing strongly decaying perturbations. This mode splitting is studied for the Ginzburg-Landau equation at different strength of the spatial coupling. We observe that isolated modes coincide with eigenmodes of the homogeneous steady state of the system; that there is a local basis where the number of non-zero components of the state vector coincides with the number of "physical" modes; that in a system with finite number of degrees of freedom the strict mode splitting disappears at finite value of coupling; that above this value a fussy mode splitting is observed.

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