

# Management of intrinsic localized modes in a driven nonlinear cyclic electrical transmission line

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**Abstract:** Nonlinear electric transmission lines continue to play an important role in the understanding of the dynamics of intrinsic localized modes (ILMs). The development of a saturable nonlinearity with MOS capacitors in a cyclic transmission line has enabled the test to determine if transition points existed where the ILM could move freely. The evolution between large amplitude spatial modes (LSMs) and ILMs in a nonlinear cyclic electrical line with saturable capacitors also has been studied in some detail. The most dramatic feature is that by simply changing the driver frequency the spectrum can evolve continuously from an LSM pattern distributed around the ring to multiple ILMs localized on a few sites and visa versa. Through this novel nonlinear excitation and switching channel either energy balanced or unbalanced LSMs and ILMs may occur around the ring.

**Keywords:** Intrinsic Localized Mode, Spatial modes, electric cyclic lattice, saturable nonlinearity