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Spiral wave solutions to lambda-omega lattice dynamical systems

In this talk we inspect an infinite system of coupled lambda-omega differential equations indexed by the two-dimensional integer lattice and show there exists a spiral wave solution. It is demonstrated that the infinite-dimensionality of the system poses unique problems in that traditional techniques from systems of finitely many differential equations cannot be directly applied. In particular, the existence proof requires extensive results from Banach space theory and a "Hard" Implicit Function Theorem. Some brief remarks on the history and relevance of lambda-omega systems are also provided to properly frame the results.