

## Patterns and spatio-temporal behavior of weakly unstable quasi-parallel Alfvén waves

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The spatio-temporal behavior of quasi-parallel Alfvén waves generated by a free energy source such as a weak ion beam propagating parallel to the magnetic field is studied. The model is based on a modified version of the Derivative Non-Linear Schrödinger (DNLS) equation, which includes linear growth rate, linear dissipation as well as nonlinear Landau damping. Further simplification to an envelope equation is proposed, and patterns and spatio-temporal chaos are studied.

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