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Solitons in waveguide arrays with competing quadratic nonlinearities

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ABSTRACT

In this work, we provide a theoretical explanation of this phenomenon through the study of the corresponding soliton solutions. Our analysis identifies the appearance of a threshold for nonlinear self-focusing, which can be selected by varying the wavenumber mismatches, and it also predicts an effective nonlinearity saturation effect.

INDEX TERMS

- **IEEE terms**
Couplings , Diffraction , Media , Optical waveguides , Propagation constant , Solitons
- **INSPEC**
 - **Controlled Indexing**
optical self-focusing , optical solitons , optical waveguides
 - **Non Controlled Indexing**
competing quadratic nonlinearities , nonlinear self focusing , nonlinearity saturation effect , optical solitons , soliton solutions , waveguide arrays

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