



MATHEMATICAL METHODS FOR MODELING OPTICAL SOLITONS

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Variational methods are presented as tools to discuss the existence of solitons for the *coupled nonlinear Schrodinger equation* (CNLS) with elliptically polarizing terms. In addition, a parameter for losses is introduced and a mechanism governing the losses is presented. Finally, the approximate soliton form for the system is constructed and numerically simulated using the split step Fourier algorithm as an initial value problem.