

Using the Nonlinear Schroedinger Equation for Precision Optical Measurements

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Frequency combs produce light that is both broadband and highly coherent. However, their operation relies on the nonlinear Schroedinger equation, in particular to achieve the broad spectral output. Because it is a highly nonlinear system, this comb output can exhibit noise due to small changes in the input conditions. We will discuss some of the high-resolution measurements possible with frequency combs as well as some of the limitations posed by noise on the comb sources.

SIAM Abstract