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Standing wave solutions for a nonlinear Schrödinger equation with mixed dispersion

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In this talk, we will be interested in standing wave solutions to a fourth order nonlinear Schrödinger equation having second and fourth order dispersion terms. This kind of equation naturally appears in nonlinear optics. In a first time, we will establish the existence of ground-state solutions. We can obtain them with two different ways : either by imposing a L^2 mass constraint or via a L^p constraint. We will then be interested in their qualitative properties : positivity, symmetry, exponential decay, uniqueness and orbital stability. We will conclude with some open questions. Joint work with Denis Bonheure, Ederson Moreira Dos Santos and Robson Nascimento.

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