

Seminar of the Work Group
Nonlinear Partial Differential Equations
WS 2020/21

November 13, 2020, 14:00 - 15:30, SR 2.066, building 20.30

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Time-periodic states in a ring resonator with two pumped modes

From an experimental point of view it is quite attractive to study the generation of Kerr frequency combs by pumping multiple modes. As an example, such techniques allow to excite bright square pulses in normal dispersion resonators with small waveguide cross-sections, which could feature significantly improved power conversion efficiency.

We discuss a new variant of the Lugiato-Lefever equation which corresponds to the situation where two modes are pumped. We will show how a-priori bounds and degree theory can be used to obtain existence results. We will also demonstrate some numerical results which fit with our analytic results.