COLOQUIO JUNIOR

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Existence of infinitely many normalized solutions for mass-supercritical nonlinear Schrödinger equations on noncompact metric graph with localized non-linearities

In this talk we study the existence of normalized solutions to nonlinear Schrödinger equations on metric graphs. Such equations posed on graphs are of interest both from the physical point of view, as they model the dynamics in elongated structures, and the mathematical point of view, as their analysis poses new and interesting challenges. A common strategy employed to find such a solution is to search for a constrained critical point of an associated energy functional via a method known as "mountain pass". For the last ten years, several existence results have been established in the case where the non-linear term of the equation is "mass-subcritical", since the problem is reduced to finding the global minimum of the associated functional. On the complementary "mass-supercritical" case however, the associated functional is no longer bounded from below. As a result, not much is known so far on this case. In this talk, we aim to broaden the little existing literature, by reviewing one of the existence results and generalizing its method.

