

# **Nonlinear Schrödinger Equations on Compact Manifolds**

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## ABSTRACT

Nonlinear Schrödinger equations (NLS) have been studied extensively in  $\mathbb{R}^n$  and more recently on compact manifolds. The ideas originating in semi-classical quantum mechanics allow solving NLS on all compact surfaces and in some higher dimensional cases. However, when the dimension is too high short time instability occurs.

In this talk I will present the basic ideas behind these developments stressing the importance of global geometry on the existence and stability of solutions.