

1135-35-717

**Alexander Pankov\*** ([alexander.pankov@morgan.edu](mailto:alexander.pankov@morgan.edu)). *Gap solitons in periodic nonlinear Schrödinger equations on periodic metric graphs.*

We consider stationary periodic nonlinear Schrödinger equations on periodic metric graphs. The main assumption is that zero is not in the spectrum of the linear part of the equation. Under natural assumption on linear and nonlinear potentials, we prove the existence of nontrivial finite energy solutions that decay exponentially fast at infinity. The proof is based on the generalized Nehari manifold approach in combination with periodic approximations. (Received September 13, 2017)