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Ground states of the stationary Choquard equations

Abstract:
The Choquard equation, also known as the nonlinear Schrodinger-Newton equation is a nonlinear Schrodinger type equation where the nonlinearity is coupled with a nonlocal convolution term given by an attractive gravitational potential. We present recent results on the existence, positivity, symmetry and optimal decay properties of ground state solutions of stationary Choquard type equations under various assumptions on the decay of the external potential and the shape of the nonlinearity. This is a joint work with Jean Van Schaftingen (Louvain-la-Neuve, Belgium)