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Nonlinear Schrodinger and Maxwell-Bloch systems with non-zero boundary conditions.

The study of scalar and vector nonlinear Schrodinger (NLS) and Maxwell-Bloch (MB) systems with non-zero boundary conditions at infinity has received renewed interest recently. This talk will report on recent results on focusing scalar and vector NLS and MB equations with non-zero boundary conditions. It will be shown how the inverse scattering transform can be constructed in both cases, and a number of explicit soliton solutions will be discussed. (Received January 16, 2017)