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*New non-invertible mappings of Schrödinger equations to free particle equations*

Discovering an equivalent PDE system for a given PDE system that is not invertibly related to the given system is a successful strategy. Such an equivalent PDE system is called a nonlocally related system. Nonlocally related PDE systems, which are obtained through the symmetry-based method and the CL-based method, are important in the analysis of a given PDE system. In this talk, we focus on an application of the symmetry-based method. Particularly, we show how to obtain systematically non-invertible mappings of Schrödinger equations to free particle equations in (1+1) and (2+1) dimensions, respectively.