

**Inverse scattering at fixed energy with non-overdetermined data**

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**Abstract:** We consider the problem of reconstruction of the potential in the Schrödinger equation from the scattering amplitude at a fixed energy in dimension  $d \geq 2$ . The main purpose of this talk consists in consideration of this problem in non-overdetermined formulation, that is when the scattering amplitude at fixed energy is given on appropriate  $d$ -dimensional submanifolds of its domain of definition. The main attention is paid to the three-dimensional case:  $d = 3$ . Our results include, in particular, the first efficient approximate reconstruction algorithm and related stability estimates for the non-overdetermined three-dimensional inverse scattering problem at sufficiently high fixed energy. This talk is based on the works [1], [2].

**References**

- [1] R.G. Novikov, Approximate Lipschitz stability for non-overdetermined inverse scattering at fixed energy, *J. Inverse Ill-Posed Probl.* 21:6, 813-823 (2013)
- [2] R.G. Novikov, An iterative approach to non-overdetermined inverse scattering at fixed energy, *Mat. Sb.*, 206:1, 131-146 (2015)