



Nonlinear Sciences > Exactly Solvable and Integrable Systems

Liouville-Arnold integrability for scattering under cone potentials

Gianluca Gorni, Gaetano Zampieri

(Submitted on 8 Apr 2012)

The problem of scattering of particles on the line with repulsive interactions, gives rise to some well-known integrable Hamiltonian systems, for example, the nonperiodic Toda lattice or Calogero's system. The aim of this note is to outline our researches which proved the integrability of a much larger class of systems, including some that had never been considered, such as the scattering with very-long-range interaction potential. The integrability of all these systems survives any small enough perturbation of the potential in an arbitrary compact set. Our framework is based on the concept of cone potentials, as defined below, which include the scattering on the line as a particular case.

Subjects: **Exactly Solvable and Integrable Systems (nlin.SI)**; Dynamical Systems (math.DS)

MSC classes: 58F05 (Primary) 58F07 70H05 (Secondary)

Journal reference: Nonlinear Evolution Equations and Dynamical Systems, Proceedings of the Vth NEEDS Workshop, Springer-Verlag, 173--180 (1990)

Cite as: [arXiv:1204.1716v1](https://arxiv.org/abs/1204.1716v1) [nlin.SI]

Submission history

From: Gaetano Zampieri [[view email](#)]
[v1] Sun, 8 Apr 2012 07:42:57 GMT (9kb)

[Which authors of this paper are endorsers?](#)

Link back to: [arXiv](#), [form interface](#), [contact](#).

Download:

- [PDF](#)
- [PostScript](#)
- [Other formats](#)

Current browse context:

nlin.SI

[< prev](#) | [next >](#)

[new](#) | [recent](#) | [1204](#)

Change to browse by:

[math](#)

[math.DS](#)

[nlin](#)

References & Citations

- [NASA ADS](#)

Bookmark([what is this?](#))

