

Integrable systems with spherical singularities.

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Integrable systems with spherical singularities possess two remarkable properties:

- 1) they admit a torus action generated by continuous functions which are smooth everywhere except for singular fibers,
- 2) singular fibers are smooth Lagrangian submanifolds (e.g. Lagrangian spheres).

The image of the momentum map for such a system is a polytope whose (combinatorial and affine) properties are essentially different from those of Delzant polytopes. The main issue to discuss is quite traditional in this area: can one reconstruct the system from this polytope?