

**Dubrovin, B. A.; Krichever, I. M.; Novikov, S. P.**

**Dynamical systems. IV: Integrable systems.** (Russian) Zbl 0591.58013

Itogi Nauki Tekh., Ser. Sovrem. Probl. Mat., Fundam. Napravleniya 4, 179-248 (1985).

This is the first part of a survey on integrable dynamical systems. In the first chapter the authors deal with Hamiltonian systems and classical methods to integrate them. The second chapter deals with modern ideas for integrating evolution systems (for example Korteweg-de Vries equation), in particular methods from algebraic geometry are considered. An English translation of the article is announced to appear in 1987 (Encyclopedia of Mathematical Sciences, Springer Verlag).

Reviewer: N.Jacob

**MSC:**

- 37J99** Dynamical aspects of finite-dimensional Hamiltonian and Lagrangian systems
- 35Q99** Partial differential equations of mathematical physics and other areas of application
- 14H99** Curves in algebraic geometry
- 37J35** Completely integrable finite-dimensional Hamiltonian systems, integration methods, integrability tests
- 37K10** Completely integrable infinite-dimensional Hamiltonian and Lagrangian systems, integration methods, integrability tests, integrable hierarchies (KdV, KP, Toda, etc.)
- 58J90** Applications of PDEs on manifolds

Cited in **4** Reviews  
Cited in **12** Documents

**Keywords:**

integrable Hamiltonian systems; Hamilton-Jacobi theory; algebraic-geometric spectral theory; hyperelliptic curves; Korteweg-de Vries equation