



## Lie-Backlund-Darboux Transformations (Paperback)

By Y. Charles Li, Artyom Yurov

International Press of Boston Inc, United States, 2014. Paperback. Condition: New. Language: English . Brand New Book. This is an interdisciplinary monograph at the cutting edges of infinite dimensional dynamical systems, partial differential equations, and mathematical physics. It discusses Y. Charles Li's work of connecting Darboux transformations to homoclinic orbits and Melnikov integrals for integrable partial differential equations; and Artyom Yurov's work in applying Darboux transformations to numerous areas of physics. Of particular interest to the reader might be the brand-new methods, developed by Li in collaboration with others, of using Darboux transformations to construct homoclinic orbits, Melnikov integrals, and Melnikov vectors for integrable systems. It should be noted that integrable systems (also named soliton equations) are the infinite dimensional counterparts of finite dimensional integrable Hamiltonian systems. What the new methods reveal are the infinite dimensional phase space structures. This work is intended for advanced undergraduates, graduate and postdoctoral students, and senior researchers in mathematics, physics, and other relevant scientific areas.

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