Integral-type Darboux transformation for soliton hierarchy with self-consistent sources

Yun Bo Zeng

`yzeng@mail.tsinghua.edu.cn`
Tsinghua University

We present integral-type Darboux transformation for the soliton hierarchy with self-consistent sources. In contrast with the normal Darboux transformation, the integral-type Darboux transformation can offer non-auto Backlund transformation between two soliton equations with self-consistent sources with different degrees. This kind of Darboux transformation enable us to construct the N-soliton solution for the soliton hierarchy with self-consistent sources. We also propose the formulas for m-times repeated integral-type Darboux transformations for the soliton hierarchy with self-consistent sources.