On a class of generalized Hamiltonian structures and their reciprocal transformations

Si-Qi Liu Youjin Zhang^a

March 23, 2009

a. Department of Mathematical Sciences, Tsinghua University, Beijing 100084, P.R. China

email: youjin@mail.tsinghua.edu.cn

We clarify the definition of a class of non-local Hamiltonian structures and present their transformation rule under certain class of reciprocal transformations. We also apply the results to the study of the problem of classification of deformations of integrable hierarchies of hydrodynamic type.

References

- [1] Si-Qi Liu, Youjin Zhang, A class of generalized Hamiltonian structures and their reciprocal transformations, to appear.
- [2] Ming Chen, Si-Qi Liu, Youjin Zhang, Hamiltonian structures and reciprocal transformations for the r-KdV-CH hierarchy, arXiv:0809.0397.
- [3] Ting Xue, Youjin Zhang, Bihamiltonian systems of hydrodynamic type and reciprocal transformations. Lett. Math. Phys. 75 (2006), 79–92.