Canonical connections on *k***-symplectic manifolds under reduction**

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Abstract.

The construction of a canonical connection on a *k*-symplectic manifold is reviewed and sufficient conditions such that it should be preserved by performing Marsden–Weinstein reduction are given.

References

[1] Awane, A., k-symplectic structures, J. Math. Phys. 33 (1992), 4046-4052

- [2] Awane, A., Some affine properties of the k-symplectic manifolds, Beitr. Algebra Geom. 39 (1998), 75-83
- [3] Blaga, A. M., The reduction of a k-symplectic manifold, Mathematica, Cluj-Napoca 50 (73), No. 2 (2008), 149-158
- [4] Cappelletti Montano, B., Blaga, A. M., Some geometric structures associated with a k-symplectic manifold, J. Phys. A: Math. Theor. 41 (2008)
- [5] Munteanu, F., Rey, A. and Salgado, M., The Günther's formalism in classical field theory: momentum map and reduction, J. Math. Phys. 45 (2004), 1730-1751
- [6] Puta, M., Some remarks on k-symplectic manifolds, Tensor N. S. 47 (1998), 109-115
- [7] Vaisman, I., Connections under symplectic reduction, arXiv: math. SG / 0006023 v1 (2000)

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