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A Dubrovin-Frobenius manifold structure of NLS type on the orbit space of B_n

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We show that the orbit space of B_2 less the image of coordinate lines under the quotient map is equipped with two Dubrovin-Frobenius manifold structures which are related respectively to the defocusing and the focusing nonlinear Schrodinger equations. Motivated by this example, we study the case of B_n and we show that the defocusing case can be generalized to arbitrary n leading to a Dubrovin-Frobenius manifold structure on the orbit space of the group. The construction relies on the existence of a non-degenerate and non-constant invariant bilinear form that plays the role of the Euclidean metric in the Dubrovin-Saito standard setting. Up to n=4 the solutions of WDVV equations we get coincide with those associated with constrained KP equations. The talk is based on a joint work with Alessandro Arsie, Igor Mencattini and Guglielmo Moroni.

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