

Mathematics > Differential Geometry

Realization of Frobenius manifolds as submanifolds in pseudo-Euclidean spaces

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(Submitted on 22 Nov 2009)

We introduce a class of k -potential submanifolds in pseudo-Euclidean spaces and prove that for an arbitrary positive integer k and an arbitrary nonnegative integer p , each N -dimensional Frobenius manifold can always be locally realized as an N -dimensional k -potential submanifold in $((k + 1)N + p)$ -dimensional pseudo-Euclidean spaces of certain signatures. For $k = 1$ this construction was proposed by the present author in a previous paper (2006). The realization of concrete Frobenius manifolds is reduced to solving a consistent linear system of second-order partial differential equations.

Comments: 24 pages

Subjects: **Differential Geometry (math.DG)**; High Energy Physics - Theory (hep-th); Mathematical Physics (math-ph); Algebraic Geometry (math.AG); Quantum Algebra (math.QA); Rings and Algebras (math.RA); Symplectic Geometry (math.SG); Exactly Solvable and Integrable Systems (nlin.SI)

Journal reference: Proceedings of the Steklov Institute of Mathematics, 2009, Vol. 267

Cite as: [arXiv:0911.4212v1](https://arxiv.org/abs/0911.4212v1) [math.DG]

Submission history

From: Oleg Mokhov [[view email](#)]

[v1] Sun, 22 Nov 2009 00:27:48 GMT (18kb)

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