Info

This note, that was found here, as a part of a collection
is written (completely with human hands) by Rupadarshi Ray,
was created on May 29, 2024 1:41:47 AM,
was last modified on May 17, 2026 7:36:50 PM, and
was exported on September 7, 2026 3:31:18 PM.

Multisymplectic manifolds

Definition. Multisymplectic manifold

A **multisymplectic manifold** (M, ω) of degree $k \geq 1$, or a k**-plecitc manifold**, is a smooth $\mathbb{R}$-manifold with a closed differential $k+1$-form ω which is non-degnerate, that is

$$\begin{aligned} \mathrm{Vec}(M) &\to \Omega^k(M) \\ X &\mapsto \iota_X \omega \end{aligned}$$

is injective.

[1]

Current note has 0 direct children and 0 total descendants.

- structures based on sets
  - manifolds
    - Multisymplectic manifolds

And it has 20 siblings.

- structures based on sets
  - manifolds
    - Closed aspherical manifolds
    - $\mathbb{C}$-manifold
    - Hermitian manifolds
    - Kahler manifolds
    - Kahler manifolds of complex dimension 2, AKA Kahler surfaces
    - smooth $\mathbb{R}$-manifold
    - Principal bundles over smooth manifolds
    - Manifold with a flow
    - $\mathbb{R}$-manifold group (Lie groups)
    - Homogeneous manifold
    - Finsler manifold
    - $\mathbb{R}$-manifold semi-Riemannian
    - Sub-Riemannian manifolds
    - $\mathbb{R}$-manifold Poisson
    - $\mathbb{R}$-manifold symplectic
    - Multisymplectic manifolds
    - Spin $\mathbb{R}$-manifold
    - $\mathbb{R}$-manifold topological
    - Toric manifolds
    - Manifolds with compatible triples

---

1. mathweb.ucsd.edu/~b3tran/expository/Multisymplectic_Geometry_CFT.pdf#page=5.51 ↩