Info

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Potential mechanical manifold M^N

Definition. Definition

Let (M, g_M) be a Riemannian manifold, $N \in \mathbb{Z}_{>0}$ and $m_i > 0$ for $1 \leq i \leq N$.

Then consider the Riemannian manifold

$$Q := M^N$$
$$g_Q := \sum_i m_i g_{M,i}$$

Let $V \in \mathcal{C}^\infty(M^N)$. Then

$$\left(T^*Q, \frac{1}{2} \| \|_Q + V\right)$$

defines a Hamiltonian flow.

ergodic on compact hypersurfaces

Proposition:

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Let $\Sigma_c := H^{-1}(c)$ is a compact regular hypersurface and the Hamiltonian flow of H on Σ_c is **ergodic**. Then

$$\overline{\frac{1}{2} m_j \| \|^2_{M,i} \Big|_{\Sigma_c}}$$

are all equal for $1 \leq j \leq N$ which we denote by $(\dim M/2)T_c$. Thus,

$$\overline{K\Big|_{\Sigma_c}} = \frac{\dim M}{2} N T_c$$

[1]

Current note has 0 direct children and 0 total descendants.

- structures based on sets
  - manifolds
    - Manifold with a flow
      - Semi-Riemannian mechanical manifold
        - Potential mechanical manifold M^N

And it has 1 siblings.

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1. Potential flows ergodic on compact Σ_c ↩