

Mathematical Physics

Relativistic forces in Lagrangian mechanics

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(Submitted on 7 Jun 2012)

We give a general definition of relativistic force in the context of Lagrangian mechanics. Once this is done we prove that the only relativistic forces which are linear on the velocities are those coming from differential 2-forms defined on the configuration space. In this sense, electromagnetic fields provide a mechanical system with the simplest type of relativistic forces.

Comments: 8 pages. arXiv admin note: text overlap with [arXiv:0801.4151](#)
Subjects: **Mathematical Physics (math-ph)**; General Relativity and Quantum Cosmology (gr-qc); Classical Physics (physics.class-ph)
MSC classes: 70-XX, 83-XX
Cite as: [arXiv:1206.1372 \[math-ph\]](#)
(or [arXiv:1206.1372v1 \[math-ph\]](#) for this version)

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