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Cartan forms and second variation for constrained variational problems. (English)

[Zbl 1101.58015](#)

Mladenov, Ivaïlo (ed.) et al., Proceedings of the 7th international conference on geometry, integrability and quantization, Sts. Constantine and Elena, Bulgaria, June 2–10, 2005. Sofia: Bulgarian Academy of Sciences (ISBN 954-8495-30-9/pbk). 140-153 (2006).

Summary: Using the Cartan form of first order constrained variational problems introduced earlier we define the second variation. This definition coincides in the unconstrained case with the usual one in terms of the double Lie derivative of the Lagrangian density, an expression, that in the constrained case does not work. The Hessian metric and other associated concepts introduced in this way are compared with those obtained through the Lagrange multiplier rule. The theory is illustrated with an example of isoperimetric problem.

For the entire collection see [[Zbl 1089.53004](#)].

MSC:

[58E30](#) Variational principles in infinite-dimensional spaces

Cited in **2** Documents