

94c:58051 58E30 70G50 83C40

Gotay, Mark J. (1-USNA); **Marsden, Jerrold E.** (1-CA)

Stress-energy-momentum tensors and the Belinfante-Rosenfeld formula. (English. English summary)

Mathematical aspects of classical field theory (Seattle, WA, 1991), 367–392, *Contemp. Math.*, 132, Amer. Math. Soc., Providence, RI, 1992.

The systematic construction of stress-energy-momentum tensors in classical field theories is a long-standing problem. For field theories defined by first-order Lagrangians which are invariant under space-time diffeomorphisms, the authors present an elegant new approach to this problem based upon Cartan forms and the associated multi-momentum map. The energy-momentum tensor so constructed has excellent properties—it is gauge covariant, it is symmetry- and divergence-free, and it depends only upon the divergence equivalence class of the Lagrangian. The authors' approach is well illustrated by several examples.

{For the entire collection see MR 93d:58006}.

Ian M. Anderson (1-UTS)