

Radiation from electrons in curved spaces

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It is shown that the energy-momentum tensor of the electromagnetic field, for an electron in a curved space, may be split into two dynamically independent parts. One of them, the radiation tensor, has the following remarkable properties: (i) its covariant divergence vanishes off the electron world line; (ii) it has no flux through light cones with apex on the world line; (iii) its diagonal terms are positive-definite under arbitrary coordinate transformations. This tensor is essentially determined by the above-mentioned properties. The radiation tensor describes at least part of the radiated energy.

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