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A reference for the covariant Hamiltonian boundary term

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The Hamiltonian for dynamic geometry generates the evolution of a spatial region along a vector field. It includes a boundary term which determines both the value of the Hamiltonian and the boundary conditions. The value gives the quasi-local quantities: energy-momentum, angular-momentum/center-of-mass. The boundary term depends not only on the dynamical variables but also on their reference values, the latter determine the ground state (having vanishing quasi-local quantities). For our preferred boundary term for Einstein's GR we propose 4D isometric matching and extremizing the energy to determine the reference metric and connection values.