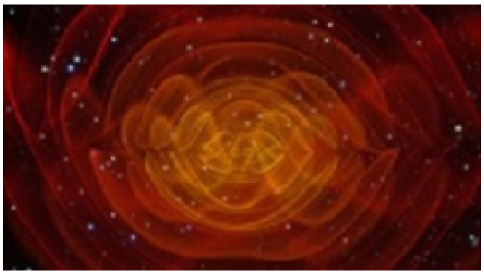

Contribution ID : **20** Type : **not specified**

Merger Simulation Using the Parker Sochacki Method and Finite Element Analysis, in a Model Explicitly Consistent with Quantum Mechanics.

Monday, 19 June 2017 16:30 (25)

The motion of two or more sources of a gravitational field is modeled using the Parker Sochacki Method in adaptive finite element analysis. In rest frames, the metric is isotropic but not conformally flat. A metric equation for the conjugate mass-energy-momentum equation provides explicit consistency with quantum mechanics: Unitarity is preserved because Planck's Constant is invariant with metric scaling. While a metric is invariant under a local lorentz transformation, it is not invariant in under a lorentz transformation at an observer with a different metric scaling. The lorentz-transformed metric provides the affine connection for the equations of motion, which gives the velocities of the rest frames of the metrics at each point in space as seen by an observer at an arbitrary location. The equivalence principle applied to the continuity equation (or bianchi identities) for the Einstein Tensor as seen by any observer provides the equation which advances the Taylor series for the metric scaling: $G^{\mu\nu}(g^2)_{,\nu} = 0$, where the metric scaling g appears in the metric equations in rest frames as $d\tau^2 = dt^2/g^2 - g^2 d\vec{r}^2$ and $dm_0^2 = g^2 E^2 - d\vec{p}^2/g^2$. This method is inherently symplectic because it uses the Parker Sochacki Method. It is inherently retarded and parallelizable because time evolution depends only on local conditions: Each processor can independently track its finite element.

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