

Quick BBH merger visualizations: Interpolating numerical apparent horizons

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Binary black hole(BBH) coalescences are often visualized by rendering their apparent horizon(AH) surfaces over time. The information for plotting these AH surfaces is obtained through numerical simulations of BBH mergers. However, numerical simulations are available only for a finite number of points in parameter space (mass ratio and spin configurations) and also for a limited number of time slices within these parameter values. We, therefore, develop an approach which interpolates the existing AH data available from these numerical simulations not only in time but also between different parameter values of the binary. Such an approach will provide us with a quick and accurate way to generate BBH merger visualizations for any point in parameter space without running a full numerical simulation.

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