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Toroidal Event Horizons in Binary Black Hole Mergers ANDY BOHN, SAUL TEUKOLSKY, LAWRENCE KIDDER, Cornell University, SIMULATING EXTREME SPACETIMES COLLABORATION — We find the first binary black hole (BBH) event horizon with a short-lived toroidal topology. The BBH mergers are produced using the Spectral Einstein Code (SpEC). It is expected that a toroidal topology should appear in space-like slicings of these $2 + 1$ dimensional event horizons, but this topology has not been found previously. While we do not see a toroidal phase in the generalized harmonic slicing used to simulate the BBHs, we do find a toroidal phase after using a motivated coordinate transformation to another space-like slicing.

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