

Abstract Submitted
for the APR12 Meeting of
The American Physical Society

Including Realistic Tidal Deformations in Binary-Black-Hole Initial Data TONY CHU, Canadian Institute for Theoretical Astrophysics, SPEC COLLABORATION — A shortcoming of current binary-black-hole initial data is their contamination by spurious gravitational radiation, or “junk” radiation, that is not astrophysically relevant. This is a consequence of an oversimplified modeling of the binary’s physics, which leads to an initially incorrect geometry that must relax during an evolution. This junk radiation that is generated in the process limits the accuracy of the actual gravitational waveforms of interest. There have been several efforts to address this issue by including more realistic outgoing gravitational radiation content in the initial data, although they did not fully satisfy the Einstein constraints. In this talk I focus on a complementary approach to improve the geometry near the black holes by including more realistic tidal deformations, while also satisfying the Einstein constraints.

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Date submitted: 06 Jan 2012

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