

[SUPPLEMENTARY MATERIAL] Remnant baryon mass in neutron star-black hole mergers: predictions for binary neutron star mimickers and rapidly spinning black holes

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TABLE I. Numerical-relativity simulations used in our fits that were already used in FF12. We list the mass ratio $Q = M_{\text{BH}}/M_{\text{NS}}$, the neutron star compaction $C_{\text{NS}} = GM_{\text{NS}}/(R_{\text{NS}}c^2)$, the dimensionless spin-parameter of the black hole χ_{BH} , the parameter $\rho = (15\Lambda)^{1/5}$ used in Eq. ?? (with Λ the dimensionless tidal deformability of the neutron star), and the baryon mass remaining outside of the black hole 10 ms after merger, M^{rem} , normalized to initial baryon mass of the neutron star M_{NS}^b . We also provide the type of equation of state, the code used to perform the simulation, and a reference to the relevant publication. The $\Gamma 2$ equation of state denotes an ideal gas with polytropic index $\Gamma = 2$, while PP refers to piecewise polytropic equations of state.

Q	χ_{BH}	C_{NS}	ρ	$\frac{M^{\text{rem}}}{M_{\text{NS}}^b}$	EoS Type	Code	Reference
7.0	0.9	0.144	6.56	0.24	$\Gamma 2$	SpEC	[1]
7.0	0.7	0.144	6.56	0.05	$\Gamma 2$	SpEC	[1]
5.0	0.5	0.144	6.56	0.05	$\Gamma 2$	SpEC	[1]
3.0	0.9	0.144	6.56	0.35	$\Gamma 2$	SpEC	[2]
3.0	0.5	0.145	6.51	0.15	$\Gamma 2/\text{PP}$	SpEC/SACRA	[2, 3]
3.0	0.0	0.144	6.56	0.04	$\Gamma 2$	UIUC/SpEC	[2, 4]
3.0	0.75	0.145	6.51	0.21	$\Gamma 2/\text{PP}$	UIUC/SACRA	[3, 4]
5.0	0.75	0.131	8.10	0.25	PP	SACRA	[3]
5.0	0.75	0.162	6.21	0.11	PP	SACRA	[3]
5.0	0.75	0.172	5.75	0.06	PP	SACRA	[3]
5.0	0.75	0.182	5.33	0.02	PP	SACRA	[3]
4.0	0.75	0.131	8.10	0.25	PP	SACRA	[3]
4.0	0.75	0.162	6.21	0.15	PP	SACRA	[3]
4.0	0.75	0.172	5.75	0.12	PP	SACRA	[3]
4.0	0.75	0.182	5.33	0.07	PP	SACRA	[3]
4.0	0.5	0.131	8.10	0.19	PP	SACRA	[3]
4.0	0.5	0.162	6.21	0.06	PP	SACRA	[3]
4.0	0.5	0.172	5.75	0.02	PP	SACRA	[3]
3.0	0.75	0.131	8.10	0.24	PP	SACRA	[3]
3.0	0.75	0.162	6.21	0.16	PP	SACRA	[3]
3.0	0.75	0.172	5.75	0.15	PP	SACRA	[3]
3.0	0.75	0.182	5.33	0.1	PP	SACRA	[3]
3.0	0.5	0.131	8.10	0.19	PP	SACRA	[3]
3.0	0.5	0.162	6.21	0.11	PP	SACRA	[3]
3.0	0.5	0.172	5.75	0.07	PP	SACRA	[3]
3.0	0.5	0.182	5.33	0.03	PP	SACRA	[3]
7.0	0.5	0.144	6.56	0.0	PP	SpEC	[1]
3.0	-0.5	0.145	6.51	0.01	PP	UIUC	[4]
5.0	0.0	0.145	6.51	0.01	PP	UIUC	[4]
4.0	0.5	0.182	5.33	0.0	PP	SACRA	[3]
3.0	-0.5	0.172	5.75	0.0	PP	SACRA	[3]

TABLE II. Same as Table I, but for simulations that were not used in FF12. The first 11 simulations are outside of the range of parameters covered by the fit derived in FF12. *Tab* refers to tabulated, composition and temperature dependent equations of state.

Q	χ_{BH}	C_{NS}	ρ	$\frac{M_b^{\text{rem}}}{M_{\text{NS}}}$	EoS Type	Code	Reference
1.0	0.0	0.16	6.19	0.02	Tab	SpEC	In Prep.
1.2	0.0	0.134	7.58	0.11	Tab	SpEC	In Prep.
3.0	0.97	0.144	6.56	0.52	Γ^2	SpEC	[5]
7.0	0.9	0.144	6.56	0.3	Γ^2	SpEC	[6]
5.83	0.9	0.135	7.52	0.28	Tab	SpEC	[7]
5.0	0.9	0.156	6.38	0.26	Tab	SpEC	[7]
5.83	0.9	0.13	7.77	0.29	Tab	SpEC	[7]
5.0	0.9	0.152	6.51	0.25	Tab	SpEC	[7]
5.83	0.9	0.148	6.66	0.28	Tab	SpEC	[7]
5.83	0.9	0.139	7.73	0.26	Tab	SpEC	[8]
5.83	0.8	0.139	7.73	0.21	Tab	SpEC	[8]
7.0	0.9	0.156	5.90	0.2	Γ^2	SpEC	[6]
7.0	0.9	0.17	5.24	0.1	Γ^2	SpEC	[6]
5.0	0.7	0.163	6.30	0.09	Tab	SpEC	[8]
5.0	0.8	0.163	6.30	0.15	Tab	SpEC	[8]
5.0	0.9	0.163	6.30	0.19	Tab	SpEC	[8]
3.0	0.75	0.18	5.45	0.09	PP	SACRA	[9]
3.0	0.75	0.161	6.44	0.13	PP	SACRA	[9]
3.0	0.75	0.147	7.00	0.17	PP	SACRA	[9]
3.0	0.75	0.138	7.66	0.18	PP	SACRA	[9]
3.0	0.5	0.18	5.45	0.04	PP	SACRA	[9]
3.0	0.5	0.161	6.44	0.09	PP	SACRA	[9]
3.0	0.5	0.147	7.00	0.12	PP	SACRA	[9]
3.0	0.5	0.138	7.66	0.13	PP	SACRA	[9]
3.0	0.0	0.18	5.45	0.0	PP	SACRA	[9]
3.0	0.0	0.161	6.44	0.015	PP	SACRA	[9]
3.0	0.0	0.147	7.00	0.05	PP	SACRA	[9]
3.0	0.0	0.138	7.66	0.08	PP	SACRA	[9]
5.0	0.75	0.18	5.45	0.03	PP	SACRA	[9]
5.0	0.75	0.161	6.44	0.12	PP	SACRA	[9]
5.0	0.75	0.147	7.00	0.16	PP	SACRA	[9]
5.0	0.75	0.138	7.66	0.18	PP	SACRA	[9]
5.0	0.5	0.18	5.45	0.0	PP	SACRA	[9]
5.0	0.5	0.161	6.44	0.02	PP	SACRA	[9]
5.0	0.5	0.147	7.00	0.07	PP	SACRA	[9]
5.0	0.5	0.138	7.66	0.12	PP	SACRA	[9]
7.0	0.75	0.18	5.45	0.0	PP	SACRA	[9]
7.0	0.75	0.161	6.44	0.035	PP	SACRA	[9]
7.0	0.75	0.147	7.00	0.095	PP	SACRA	[9]
7.0	0.75	0.138	7.66	0.15	PP	SACRA	[9]
7.0	0.5	0.18	5.45	0.0	PP	SACRA	[9]
7.0	0.5	0.161	6.44	0.0	PP	SACRA	[9]
7.0	0.5	0.147	7.00	0.0	PP	SACRA	[9]
7.0	0.5	0.138	7.66	0.02	PP	SACRA	[9]