

Inferring Core-Collapse Supernova Physics with Gravitational Waves

J. Logue,^{1,2,*} C. D. Ott,^{3,4,5,†} I. S. Heng,^{1,‡} P. Kalmus,^{2,3,§} and J. H. C. Scargill^{6,2,¶}

¹*SUPA, Institute for Gravitational Research, School of Physics and Astronomy,
University of Glasgow, Glasgow G12 8QQ Scotland, United Kingdom*

²*LIGO Laboratory, California Institute of Technology, Pasadena, CA 91125, USA*

³*TAPIR, MC 350-17, California Institute of Technology, Pasadena, CA 91125, USA*

⁴*Institute for the Physics and Mathematics of the Universe (IPMU), The University of Tokyo, Kashiwa, Japan*

⁵*Center for Computation and Technology, Louisiana State University, Baton Rouge, LA, USA*

⁶*New College, Oxford, OX1 3BN, UK*

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Stellar collapse and the subsequent development of a core-collapse supernova explosion emit bursts of gravitational waves (GWs) that might be detected by the advanced generation of laser interferometer gravitational-wave observatories such as Advanced LIGO, Advanced Virgo, and LCGT. GW bursts from core-collapse supernovae encode information on the intricate multi-dimensional dynamics at work at the core of a dying massive star and may provide direct evidence for the yet uncertain mechanism driving supernovae in massive stars. Recent multi-dimensional simulations of core-collapse supernovae exploding via the neutrino, magnetorotational, and acoustic explosion mechanisms have predicted GW signals which have distinct structure in both the time and frequency domains. Motivated by this, we describe a promising method for determining the most likely explosion mechanism underlying a hypothetical GW signal, based on Principal Component Analysis and Bayesian model selection. Using simulated Advanced LIGO noise and assuming a single detector and linear waveform polarization for simplicity, we demonstrate that our method can distinguish magnetorotational explosions throughout the Milky Way ($D \lesssim 10$ kpc) and explosions driven by the neutrino and acoustic mechanisms to $D \lesssim 2$ kpc. Furthermore, we show that we can differentiate between models for rotating accretion-induced collapse of massive white dwarfs and models of rotating iron core collapse with high reliability out to several kpc.

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Supplementary Information – Complete Numerical Results

In this document, we provide supplementary information for J. Logue *et al.*, arXiv:1202.3256.

Table I lists the full results for the `Dim` [1], `Mur` [2], and `Ott` [3] catalogs with respect to the `Dim`, `Mur`, and `Ott` principal components (PCs), for distances of (0.2, 2, and 10) kpc and obtained using 3 and 7 PCs.

Table II lists the full results for the `Dim` [1] and `Abd` [4] catalogs with respect to the `Dim` and `Abd` PCs, for distances of (0.2, 2, and 10) kpc and obtained using 3 and 7 PCs.

Table III provides a mapping between the waveform enumeration scheme used in Tables I and III and the model names in the respective catalogs.

*Electronic address: j.logue@physics.gla.ac.uk

†Electronic address: cott@tapir.caltech.edu

‡Electronic address: Ik.Heng@glasgow.ac.uk

§Electronic address: kalmus@caltech.edu

¶Electronic address: james.scargill@new.ox.ac.uk

TABLE I: $\log B_{SN}$ with respect to the Dim, Mur, and Ott PCs computed for all injected waveforms from the Dim, Mur, and Ott catalogs, which we take to be representative of the magnetorotational, neutrino, and acoustic explosion mechanism, respectively. Results for source distances of 0.2, 2, and 10 kpc are given. Each table entry shows the results for 3 PCs (to the left of the vertical divider |) and the 7-PC result (to the right of the divider). $\log B_{SN} \leq -47$ when 7 PCs are used and $\log B_{SN} \leq -21$ when 3 PCs are used indicates that the injected signal is likely consistent with noise while larger values suggests that the signal belongs to the signal model whose PCs were used in the analysis.

Waveform	$\log B_{SN}$ Dim PCs			$\log B_{SN}$ Mur PCs			$\log B_{SN}$ Ott PCs		
	0.2 kpc	2 kpc	10 kpc	0.2 kpc	2 kpc	10 kpc	0.2 kpc	2 kpc	10 kpc
Dim 1	5×10 ⁵ 7×10 ⁵	5960 6840	214 222	9201 17209	66 119	-22 -45	9 1800	-26 -35	-26 -51
Dim 2	38982 48686	364 430	-10 -34	9178 25647	65 203	-22 -42	-25 222	-27 -51	-26 -52
Dim 3	36176 5×10 ⁵	336 4654	-11 134	2×10 ⁵ 3×10 ⁵	2283 3378	66 85	-24 745	-26 -46	-26 -52
Dim 4	4×10 ⁵ 7×10 ⁵	4174 7282	142 240	7425 18940	48 136	-23 -45	3 391	-26 -49	-26 -52
Dim 5	96978 5×10 ⁵	944 4653	13 135	16645 44878	140 395	-19 -34	1 746	-26 -46	-26 -52
Dim 6	3×10 ⁵ 7×10 ⁵	3464 6460	114 207	38703 64022	361 587	-10 -27	-22 209	-27 -51	-26 -52
Dim 7	7×10 ⁵ 2×10 ⁶	7025 15356	255 562	1×10 ⁵ 2×10 ⁵	1019 1554	16 12	10 2587	-26 -27	-26 -51
Dim 8	4×10 ⁵ 7×10 ⁵	4090 7304	138 241	4928 25707	23 204	-24 -42	-17 311	-27 -50	-26 -52
Dim 9	5×10 ⁵ 9×10 ⁵	4511 8829	155 301	30753 54385	281 491	-14 -31	-4 2825	-26 -25	-26 -51
Dim 10	4×10 ⁵ 5×10 ⁵	4160 5101	142 152	18441 53243	158 479	-19 -31	-16 2293	-26 -30	-26 -51
Dim 11	1×10 ⁶ 1×10 ⁶	9925 10746	372 378	41741 1×10 ⁵	391 979	-9 -11	112 2830	-25 -25	-26 -51
Dim 12	5×10 ⁵ 8×10 ⁵	4821 8231	167 278	8746 35577	61 302	-22 -38	-11 1154	-26 -42	-26 -52
Dim 13	7×10 ⁵ 8×10 ⁵	6790 8339	247 282	40007 60051	374 547	-10 -28	-21 3575	-26 -17	-26 -51
Dim 14	8×10 ⁵ 8×10 ⁵	7571 7951	278 266	11614 42477	90 371	-21 -35	-9 1557	-26 -37	-26 -51
Dim 15	2×10 ⁶ 2×10 ⁶	16019 16831	616 621	18703 35539	161 302	-18 -38	-15 2349	-26 -30	-26 -51
Dim 16	2×10 ⁶ 2×10 ⁶	16219 18143	624 674	17008 28813	144 235	-19 -41	9 2898	-26 -24	-26 -51
Dim 17	3×10 ⁶ 4×10 ⁶	33164 38426	1302 1485	19678 34842	170 295	-18 -38	5 4542	-26 -8	-26 -50
Dim 18	3×10 ⁶ 4×10 ⁶	32847 40204	1289 1557	24086 40259	214 349	-16 -36	109 6072	-25 8	-26 -50
Dim 19	5×10 ⁶ 5×10 ⁶	45911 47744	1812 1858	31522 52399	289 471	-13 -31	27 7471	-26 22	-26 -49
Dim 20	5×10 ⁶ 6×10 ⁶	50522 55862	1996 2183	46396 77630	438 723	-7 -21	45 10295	-26 50	-26 -48
Dim 21	9×10 ⁵ 1×10 ⁶	8943 11153	333 394	46027 67010	434 617	-7 -25	-20 3948	-26 -14	-26 -50
Dim 22	9×10 ⁵ 9×10 ⁵	9015 9184	336 315	17577 45015	149 397	-19 -34	-8 3227	-26 -21	-26 -51
Dim 23	2×10 ⁶ 3×10 ⁶	19612 23468	760 887	14057 26700	114 214	-20 -42	7 3136	-26 -22	-26 -51
Dim 24	2×10 ⁶ 3×10 ⁶	23748 29710	925 1137	31281 48777	286 434	-13 -33	-14 3614	-26 -17	-26 -51
Dim 25	3×10 ⁶ 5×10 ⁶	34175 46057	1342 1791	16241 27924	136 226	-19 -41	43 9573	-26 43	-26 -48
Dim 26	5×10 ⁶ 5×10 ⁶	52403 54505	2071 2129	36170 58531	335 532	-11 -29	23 9191	-26 39	-26 -49
Dim 27	5×10 ⁶ 7×10 ⁶	54719 66119	2164 2593	54922 92208	523 869	-4 -15	147 23016	-25 177	-26 -43
Dim 28	7×10 ⁶ 8×10 ⁶	69683 78301	2763 3081	86992 1×10 ⁵	844 1409	9 6	206 22497	-24 172	-26 -43
Dim 29	6×10 ⁶ 7×10 ⁶	63642 68145	2521 2674	76111 1×10 ⁵	735 1175	5 -3	159 24907	-25 196	-26 -42
Dim 30	7×10 ⁶ 8×10 ⁶	71480 82253	2835 3238	1×10 ⁵ 2×10 ⁵	1179 1862	22 24	292 27081	-23 218	-26 -41
Dim 31	6×10 ⁶ 7×10 ⁶	60879 67467	2411 2647	1×10 ⁵ 2×10 ⁵	1335 2080	29 33	403 20790	-22 155	-26 -44
Dim 32	8×10 ⁶ 8×10 ⁶	79356 85813	3150 3381	2×10 ⁵ 3×10 ⁵	1663 2668	42 57	451 30148	-22 248	-26 -40
Dim 33	2×10 ⁵ 3×10 ⁵	2001 3667	55 95	2403 5718	-2 4	-25 -50	9 1745	-26 -36	-26 -51
Dim 34	38933 2×10 ⁵	363 1607	-10 12	3159 4899	5 -4	-25 -50	-26 -43	-27 -54	-26 -52
Dim 35	4×10 ⁵ 9×10 ⁵	4382 8877	150 303	61655 1×10 ⁵	590 998	-1 -10	-23 1132	-27 -42	-26 -52
Dim 36	5×10 ⁵ 6×10 ⁵	4543 6459	157 207	7765 12871	51 75	-23 -47	4 497	-26 -48	-26 -52
Dim 37	5×10 ⁵ 1×10 ⁶	4643 12165	160 435	37748 1×10 ⁵	351 1108	-11 -6	-23 749	-27 -46	-26 -52
Dim 38	5×10 ⁵ 1×10 ⁶	5376 10271	190 359	16959 51219	143 459	-19 -32	-9 1588	-26 -37	-26 -51
Dim 39	1×10 ⁶ 1×10 ⁶	10751 11560	405 411	44815 1×10 ⁵	422 952	-8 -12	-7 5599	-26 3	-26 -50
Dim 40	1×10 ⁶ 1×10 ⁶	11486 13507	435 488	3476 26192	8 209	-24 -42	-10 2895	-26 -24	-26 -51
Dim 41	2×10 ⁶ 3×10 ⁶	24718 27451	964 1046	13967 30083	113 247	-20 -40	-7 3103	-26 -22	-26 -51
Dim 42	3×10 ⁶ 3×10 ⁶	25389 26382	991 1004	27408 44037	248 387	-15 -35	11 6694	-26 14	-26 -49
Dim 43	2×10 ⁶ 2×10 ⁶	15998 16290	615 600	17076 42954	144 376	-19 -35	-13 5277	-26 -0	-26 -50
Dim 44	2×10 ⁶ 2×10 ⁶	17309 20816	668 781	2416 23291	-2 180	-25 -43	-13 3704	-26 -16	-26 -51
Dim 45	3×10 ⁶ 6×10 ⁶	33248 38677	1305 1495	20348 33147	177 278	-18 -39	61 4913	-26 -4	-26 -50
Dim 46	4×10 ⁶ 4×10 ⁶	41708 44959	1644 1747	33018 52043	304 467	-13 -31	51 8078	-26 28	-26 -49
Dim 47	6×10 ⁶ 6×10 ⁶	61811 63037	2448 2470	44805 80528	422 752	-8 -20	34 13203	-26 79	-26 -47
Dim 48	7×10 ⁶ 7×10 ⁶	74282 75271	2947 2959	75393 1×10 ⁵	728 1191	4 -3	154 18008	-25 127	-26 -45
Dim 49	7×10 ⁶ 7×10 ⁶	65441 69468	2593 2727	1×10 ⁵ 2×10 ⁵	1438 2236	33 39	292 21862	-23 165	-26 -43
Dim 50	8×10 ⁶ 8×10 ⁶	77414 82307	3072 3241	2×10 ⁵ 3×10 ⁵	1861 2985	50 69	421 27432	-22 221	-26 -41
Dim 51	5×10 ⁶ 6×10 ⁶	54421 56743	2152 2218	1×10 ⁵ 2×10 ⁵	1454 2190	33 37	50 10656	-26 53	-26 -48

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TABLE I – continued from previous page

Waveform	$\log B_{SN}$ Dim PCs						$\log B_{SN}$ Mur PCs						$\log B_{SN}$ Ott PCs					
	0.2 kpc		2 kpc		10 kpc		0.2 kpc		2 kpc		10 kpc		0.2 kpc		2 kpc		10 kpc	
Dim 52	6×10 ⁶	6×10 ⁶	58049	61503	2297	2409	1×10 ⁵	2×10 ⁵	1223	1906	24	26	-6	4874	-26	-4	-26	-50
Dim 53	4×10 ⁶	5×10 ⁶	43138	45783	1701	1780	54329	70514	517	652	-4	-24	-14	5011	-26	-3	-26	-50
Dim 54	4×10 ⁶	5×10 ⁶	41278	52715	1626	2057	62363	89854	597	845	-1	-16	17	7723	-26	24	-26	-49
Dim 55	7×10 ⁶	9×10 ⁶	72043	86201	2857	3396	31465	56143	288	508	-13	-30	25	24850	-26	195	-26	-42
Dim 56	8×10 ⁶	1×10 ⁷	79297	98285	3147	3880	29410	79482	268	742	-14	-21	239	27418	-24	221	-26	-41
Dim 57	9×10 ⁶	1×10 ⁷	90407	99477	3592	3927	1×10 ⁵	2×10 ⁵	1213	2011	24	30	490	31727	-21	264	-26	-39
Dim 58	1×10 ⁷	1×10 ⁷	1×10 ⁵	1×10 ⁵	4879	5127	1×10 ⁵	2×10 ⁵	1065	1970	18	29	453	53689	-22	484	-26	-31
Dim 59	9×10 ⁶	9×10 ⁶	86468	91056	3434	3591	1×10 ⁵	2×10 ⁵	1284	2303	26	42	-5	7489	-26	22	-26	-49
Dim 60	1×10 ⁷	1×10 ⁷	1×10 ⁵	1×10 ⁵	4181	4417	1×10 ⁵	2×10 ⁵	1136	1745	21	20	-8	3835	-26	-15	-26	-51
Dim 61	9×10 ⁶	9×10 ⁶	87287	91162	3467	3595	92087	2×10 ⁵	895	1864	11	24	-14	2579	-26	-27	-26	-51
Dim 62	1×10 ⁷	1×10 ⁷	1×10 ⁵	1×10 ⁵	4087	4256	2×10 ⁵	3×10 ⁵	1733	2747	44	60	-8	5565	-26	3	-26	-50
Dim 63	9×10 ⁶	1×10 ⁷	92406	95302	3672	3760	1×10 ⁵	2×10 ⁵	1276	2309	26	42	25	7964	-26	26	-26	-49
Dim 64	1×10 ⁷	1×10 ⁷	1×10 ⁵	1×10 ⁵	4113	4151	68211	2×10 ⁵	656	1663	1	16	46	6128	-26	8	-26	-50
Dim 65	3×10 ⁵	7×10 ⁵	3096	5551	99	170	11829	22517	92	172	-21	-43	28	705	-26	-46	-26	-52
Dim 66	1×10 ⁵	2×10 ⁵	1474	2427	34	45	3066	5697	4	4	-25	-50	-22	395	-27	-49	-26	-52
Dim 67	4×10 ⁵	1×10 ⁶	4146	12286	140	440	4735	16836	21	115	-24	-46	19	113	-26	-52	-26	-52
Dim 68	3×10 ⁵	7×10 ⁵	3392	6550	111	211	9537	24397	69	191	-22	-43	-17	176	-26	-51	-26	-52
Dim 69	5×10 ⁵	1×10 ⁶	4755	13085	165	472	10687	32923	80	276	-22	-39	-18	628	-26	-47	-26	-52
Dim 70	5×10 ⁵	7×10 ⁵	4801	7195	167	236	8139	14200	55	89	-23	-47	-13	126	-26	-52	-26	-52
Dim 71	7×10 ⁵	8×10 ⁵	6901	7620	251	253	1×10 ⁵	2×10 ⁵	1317	1975	28	29	5	469	-26	-48	-26	-52
Dim 72	5×10 ⁵	9×10 ⁵	5305	8580	187	292	5607	38924	30	336	-24	-37	-14	1790	-26	-35	-26	-51
Dim 73	1×10 ⁶	1×10 ⁶	14261	14480	546	528	11436	22891	88	176	-21	-43	-18	2626	-26	-27	-26	-51
Dim 74	1×10 ⁶	2×10 ⁶	13850	17119	529	633	13471	25715	108	204	-20	-42	-20	2989	-26	-23	-26	-51
Dim 75	8×10 ⁵	1×10 ⁶	8249	10204	305	356	46032	76058	434	707	-8	-22	-6	3446	-26	-19	-26	-51
Dim 76	1×10 ⁶	1×10 ⁶	9927	11278	372	399	5703	39454	31	341	-24	-37	-6	2060	-26	-33	-26	-51
Dim 77	2×10 ⁶	2×10 ⁶	21019	24996	816	948	30033	38635	274	333	-14	-37	-16	2692	-26	-26	-26	-51
Dim 78	2×10 ⁶	2×10 ⁶	22293	26566	867	1011	34730	56006	321	507	-12	-30	-3	3676	-26	-16	-26	-51
Dim 79	3×10 ⁶	4×10 ⁶	33884	42840	1331	1662	22047	44264	194	389	-17	-35	80	5758	-25	5	-26	-50
Dim 80	5×10 ⁶	5×10 ⁶	48888	52070	1931	2031	33636	55835	310	505	-12	30	64	8796	-26	35	-26	-49
Dim 81	6×10 ⁶	6×10 ⁶	62343	62963	2469	2467	92203	1×10 ⁵	896	1435	11	7	171	18307	-25	130	-26	-45
Dim 82	7×10 ⁶	7×10 ⁶	70351	74820	2789	2941	1×10 ⁵	2×10 ⁵	1326	2007	28	30	198	24194	-24	189	-26	-43
Dim 83	6×10 ⁶	6×10 ⁶	63672	64886	2522	2544	1×10 ⁵	2×10 ⁵	1095	1704	19	18	207	26553	-24	212	-26	-41
Dim 84	7×10 ⁶	8×10 ⁶	74236	78561	2945	3091	2×10 ⁵	3×10 ⁵	1631	2579	40	53	318	27521	-23	222	-26	-41
Dim 85	3×10 ⁶	3×10 ⁶	25738	26859	1005	1023	4139	29285	15	240	-24	-40	1	2242	-26	-31	-26	-51
Dim 86	3×10 ⁶	3×10 ⁶	26560	33076	1038	1271	39826	60305	372	550	-10	-28	-6	3256	-26	-21	-26	-51
Dim 87	5×10 ⁶	6×10 ⁶	53817	56735	2128	2218	76009	1×10 ⁵	734	1047	4	-8	7	12785	-26	75	-26	-47
Dim 88	6×10 ⁶	7×10 ⁶	58498	68680	2315	2696	37704	60526	351	552	-11	-28	52	13670	-26	84	-26	-47
Dim 89	7×10 ⁶	8×10 ⁶	71123	81777	2820	3220	34526	67455	319	621	-12	-25	205	33169	-24	279	-26	-39
Dim 90	9×10 ⁶	1×10 ⁷	92625	99854	3680	3942	91643	2×10 ⁵	890	1541	11	12	325	37935	-23	326	-26	-37
Dim 91	8×10 ⁶	8×10 ⁶	78401	81307	3111	3201	1×10 ⁵	2×10 ⁵	1326	2247	28	40	115	28247	-25	229	-26	-41
Dim 92	1×10 ⁷	1×10 ⁷	99016	1×10 ⁵	3936	3987	2×10 ⁵	4×10 ⁵	2089	3709	59	98	138	30409	-25	251	-26	-40
Dim 93	8×10 ⁶	8×10 ⁶	76959	79708	3054	3137	2×10 ⁵	3×10 ⁵	1897	3198	51	78	9	13354	-26	80	-26	-47
Dim 94	9×10 ⁶	9×10 ⁶	86181	91312	3423	3601	2×10 ⁵	3×10 ⁵	2230	3489	64	89	13	10443	-26	51	-26	-48
Dim 95	7×10 ⁶	7×10 ⁶	71598	75280	2839	2959	60962	1×10 ⁵	583	1250	-2	-0	-15	3375	-26	-19	-26	-51
Dim 96	8×10 ⁶	9×10 ⁶	82654	86952	3281	3427	2×10 ⁵	3×10 ⁵	1639	2726	41	59	7	5041	-26	-3	-26	-50
Dim 97	1×10 ⁶	2×10 ⁶	15411	17483	592	647	2×10 ⁵	3×10 ⁵	2264	2777	66	61	-11	4951	-26	-4	-26	-50
Dim 98	6×10 ⁵	7×10 ⁵	6467	6915	234	225	8333	10451	57	51	-23	-48	-16	833	-26	-45	-26	-52
Dim 99	5×10 ⁵	1×10 ⁶	5425	13260	191	479	49500	1×10 ⁵	469	1067	-6	-7	-13	710	-26	-46	-26	-52
Dim 100	4×10 ⁵	8×10 ⁵	3817	7814	128	261	12068	37182	94	318	-21	-37	-20	2163	-27	-32	-26	-51
Dim 101	1×10 ⁶	2×10 ⁶	13689	17107	523	632	4436	60347	18	550	-24	-28	-14	3255	-26	-21	-26	-51
Dim 102	1×10 ⁶	1×10 ⁶	10659	13115	402	473	23734	40884	211	356	-16	-36	-24	4041	-27	-13	-26	-50
Dim 103	1×10 ⁶	2×10 ⁶	9653	18888	361	704	17522	40936	149	356	-19	-36	111	1250	-25	-41	-26	-52
Dim 104	3×10 ⁶	3×10 ⁶	30457	30810	1194	1181	33988	55824	314	505	-12	-30	61	11223	-26	59	-26	-48
Dim 105	5×10 ⁶	6×10 ⁶	50698	58332	2003	2282	35377	63057	327	577	-12	-27	173	9709	-25	44	-26	-48
Dim 106	6×10 ⁶	7×10 ⁶	63637	74231	2521	2918	93541	1×10 ⁵	909	1399	12	6	241	17987	-24	127	-26	-45
Dim 107	4×10 ⁶	4×10 ⁶	38515	43874	1516	1703	27616	45256	250	399	-15	-34	23	4757	-26	-6	-26	-50

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TABLE I – continued from previous page

Waveform	$\log B_{SN}$ Dim PCs					$\log B_{SN}$ Mur PCs					$\log B_{SN}$ Ott PCs				
	0.2 kpc		2 kpc		10 kpc	0.2 kpc		2 kpc		10 kpc	0.2 kpc		2 kpc		10 kpc
Dim 108	4×10 ⁶	5×10 ⁶	38024	48108	1496 1873	57813 84031	552 787	-3 -19			149 9576	-25 43		-26 -48	
Dim 109	7×10 ⁶	8×10 ⁷	74203	80146	2943 3154	46939 85421	443 801	-7 -18			85 19565	-25 142		-26 -44	
Dim 110	9×10 ⁶	1×10 ⁷	94810	96528	3768 3810	1×10 ⁵ 2×10 ⁵	1203 1870	23 25			237 26427	-24 211		-26 -42	
Dim 111	9×10 ⁶	1×10 ⁷	90747	95728	3605 3777	2×10 ⁵ 3×10 ⁵	2286 3444	67 88			344 37248	-23 319		-26 -37	
Dim 112	1×10 ⁷	1×10 ⁷	1×10 ⁵	1×10 ⁵	4641 4790	2×10 ⁵ 3×10 ⁵	1922 3137	52 75			410 48613	-22 433		-26 -33	
Dim 113	2×10 ⁶	7×10 ⁶	18329	66619	708 2613	4×10 ⁵ 6×10 ⁵	3926 5673	132 177			145 758	-25 -46		-26 -52	
Dim 114	8×10 ⁶	9×10 ⁶	83961	89592	3334 3532	47326 92168	447 868	-7 -16			10 3729	-26 -16		-26 -51	
Dim 115	7×10 ⁶	7×10 ⁶	65311	66806	2588 2621	59390 1×10 ⁵	568 1048	-2 -8			1 6495	-26 12		-26 -49	
Dim 116	6×10 ⁶	6×10 ⁶	60831	63227	2409 2477	38729 97312	361 920	-10 -13			15 5543	-26 2		-26 -50	
Dim 117	7×10 ⁶	8×10 ⁶	72077	85415	2858 3365	10311 24420	77 191	-22 -43			24 22704	-26 174		-26 -43	
Dim 118	9×10 ⁶	1×10 ⁷	93489	99303	3715 3921	17543 51768	149 464	-19 -32			87 23384	-25 181		-26 -43	
Dim 119	1×10 ⁷	1×10 ⁷	1×10 ⁵	1×10 ⁵	4737 5411	47029 1×10 ⁵	444 951	-7 -12			519 56978	-21 517		-26 -29	
Dim 120	2×10 ⁷	2×10 ⁷	2×10 ⁵	2×10 ⁵	6159 7043	2×10 ⁵ 4×10 ⁵	1601 3763	39 100			918 95429	-17 901		-25 -14	
Dim 121	1×10 ⁷	1×10 ⁷	1×10 ⁵	1×10 ⁵	5159 5602	91351 4×10 ⁵	887 4198	11 118			44 25028	-26 197		-26 -42	
Dim 122	1×10 ⁷	2×10 ⁷	1×10 ⁵	2×10 ⁵	5333 5985	2×10 ⁵ 3×10 ⁵	1955 3385	53 85			7 12873	-26 76		-26 -47	
Dim 123	2×10 ⁷	2×10 ⁷	2×10 ⁵	2×10 ⁵	6717 6879	2×10 ⁵ 3×10 ⁵	1716 2976	44 69			60 7142	-26 18		-26 -49	
Dim 124	2×10 ⁷	2×10 ⁷	2×10 ⁵	2×10 ⁵	7863 7911	2×10 ⁵ 4×10 ⁵	1842 4158	49 116			70 12369	-26 71		-26 -47	
Dim 125	2×10 ⁷	2×10 ⁷	2×10 ⁵	2×10 ⁵	7413 7637	78833 3×10 ⁵	762 2485	6 49			65 6169	-26 9		-26 -50	
Dim 126	2×10 ⁷	2×10 ⁸	2×10 ⁵	2×10 ⁵	8174 8302	2×10 ⁵ 4×10 ⁵	1830 3968	48 109			160 19781	-25 145		-26 -44	
Dim 127	2×10 ⁷	2×10 ⁷	2×10 ⁵	2×10 ⁵	7273 7853	2×10 ⁵ 5×10 ⁵	2059 5239	57 159			114 15457	-25 101		-26 -46	
Dim 128	1×10 ⁷	2×10 ⁷	1×10 ⁵	2×10 ⁵	5323 6241	2×10 ⁵ 3×10 ⁵	1726 3369	44 85			33 4622	-26 -7		-26 -50	
Mur 1	3603	10886	10 52		-24 -50	13331 19683	107 144	-21 -44			-27 -33	-27 -53		-26 -52	
Mur 2	3498	8162	9 25		-24 -51	64956 4×10 ⁵	623 3939	0 107			-21 -13	-26 -53		-26 -52	
Mur 3	4253	9073	16 34		-24 -50	5×10 ⁵ 6×10 ⁵	5020 6334	176 203			-21 -32	-27 -53		-26 -52	
Mur 4	4205	10631	16 50		-24 -50	59264 4×10 ⁵	566 3775	-2 101			-22 -5	-27 -53		-26 -52	
Mur 5	895	5580	-17 -1		-25 -52	4393 12720	18 74	-24 -47			-24 28	-26 -53		-26 -52	
Mur 6	365	819	-23 -48		-26 -54	3874 7591	12 23	-24 -49			-27 -42	-27 -54		-26 -52	
Mur 7	1071	3602	-16 -21		-25 -52	17915 4×10 ⁵	153 3595	-19 94			-23 -14	-27 -53		-26 -52	
Mur 8	280	2362	-23 -33		-26 -53	4×10 ⁵ 5×10 ⁵	4198 4981	143 149			-26 -29	-27 -54		-26 -52	
Mur 9	1461	7459	-12 18		-25 -51	82951 413625	803 4083	7 113			-25 -47	-27 -54		-26 -52	
Mur 10	1586	9001	-10 34		-25 -51	22195 33968	196 286	-17 -39			-27 -51	-27 -54		-26 -52	
Mur 11	4191	10794	16 51		-24 -49	9276 15003	66 97	-22 -46			-26 -8	-27 -53		-26 -52	
Mur 12	4294	8458	17 28		-24 -51	11275 21956	86 166	-21 -43			-25 60	-27 -53		-26 -52	
Mur 13	8317	15003	57 94		-23 -48	14370 33625	117 283	-20 -39			-25 13	-27 -53		-26 -52	
Mur 14	7450	10699	48 51		-23 -50	23744 29439	211 241	-16 -41			-25 -12	-27 -53		-26 -52	
Mur 15	2030	7658	-6 20		-25 -51	8×10 ⁵ 8×10 ⁵	7672 7812	282 262			-12 -22	-26 -53		-26 -52	
Mur 16	5422	10972	28 53		-24 -50	45560 90327	429 850	-8 -16			-24 -48	-27 -53		-26 -52	
Ott 1	3731	6155	11 4		-24 -51	132 313	-25 -50	-26 -52			544 1×10 ⁶	-21 11893		-26 426	
Ott 2	1520	2428	-11 -32		-25 -53	54 146	-26 -52	-26 -52			32145 7×10 ⁶	295 65635		-13 2575	
Ott 3	1301	2957	-13 -28		-25 -53	810 1222	-18 -41	-26 -52			90230 6×10 ⁶	876 61932		10 2427	
Ott 4	1936	4669	-7 -10		-25 -52	316 632	-23 -47	-26 -52			3×10 ⁵ 2×10 ⁷	2477 2×10 ⁵		74 6091	
Ott 5	578	2417	-20 -33		-26 -53	1931 2601	-7 -27	-25 -51			6×10 ⁷ 6×10 ⁷	6×10 ⁵ 6×10 ⁵		24653 24655	
Ott 6	622	2895	-20 -28		-26 -53	-19 587	-27 -47	-26 -52			4×10 ⁷ 4×10 ⁷	4×10 ⁵ 4×10 ⁵		17975 17957	
Ott 7	2343	5963	-3 3		-25 -51	1918 2969	-7 -24	-25 -51			1×10 ⁸ 1×10 ⁸	1×10 ⁶ 1×10 ⁶		45853 45829	

TABLE II: $\log B_{SN}$ with respect to the Abd and Dim, PCs computed for all injected waveforms from the Abd, Dim catalogs, which we take to be representative of the magnetorotational mechanism. Results for source distances of 0.2, 2, and 10 kpc are given. Each table entry shows the results for 3 PCs (to the left of the vertical divider |) and the 7-PC result (to the right of the divider). $\log B_{SN} \leq -47$ when 7 PCs are used and $\log B_{SN} \leq -21$ when 3 PCs are used indicates that the injected signal is likely consistent with noise while larger values suggests that the signal belongs to the signal model whose PCs were used in the analysis. Results where SMEE has incorrectly favored the wrong catalog are shown in red.

Waveform	$\log B_{SN}$ Abd PCs			$\log B_{SN}$ Dim PCs		
	0.2 kpc	2 kpc	10 kpc	0.2 kpc	2 kpc	10 kpc
Abd 1	222735 320932	2201 3155	63 76	106349 203758	1037 1980	17 28
Abd 2	398171 624213	3956 6187	134 197	173054 358589	1704 3529	43 89
Abd 3	1640250 2013179	16376 20077	630 752	486508 1080989	4839 10753	169 378
Abd 4	3415831 3700082	34132 36946	1341 1427	824421 1956901	8218 19513	304 729
Abd 5	4769576 5072977	47670 50675	1882 1976	736981 2532501	7343 25269	268 959
Abd 6	5249519 5471431	52469 54660	2074 2136	925087 2556903	9225 25512	344 969
Abd 7	6256244 6347320	62536 63419	2477 2486	934821 2929598	9322 29239	348 1118
Abd 8	6714012 6761259	67114 67558	2660 2652	4207469 4637638	42048 46320	1657 1801
Abd 9	2969022 5486461	29664 54810	1162 2142	321790 3072743	3192 30671	103 1175
Abd 10	4677207 4888830	46746 48834	1845 1903	4327906 4549626	43253 45440	1705 1766
Abd 11	4878144 6144069	48755 61386	1926 2405	57677 2610623	551 26050	-3 990
Abd 12	8049046 8108859	80464 81034	3194 3191	6033689 6353610	60311 63480	2388 2487
Abd 13	8270056 8510691	82674 85052	3282 3351	6399007 6731948	63964 67263	2534 2639
Abd 14	8606977 8747856	86044 87424	3417 3446	4815908 5782638	48133 57770	1901 2259
Abd 15	6507343 6574403	65047 65690	2577 2577	4797458 5041449	47948 50358	1893 1963
Abd 16	4854767 5028347	48521 50229	1916 1959	5031516 5169111	50289 51635	1987 2014
Abd 17	6310742 6607439	63081 66019	2499 2590	6198503 6478256	61959 64726	2454 2538
Abd 18	766676 1033574	7641 10281	281 361	973900 1069927	9713 10643	364 374
Abd 19	117698 167413	1151 1619	21 14	60979 102269	584 967	-1 -13
Abd 20	41152 55145	385 497	-9 -31	21525 34605	189 290	-17 -40
Abd 21	8444 11236	58 58	-22 -49	4313 10873	17 52	-24 -50
Abd 22	2590 3231	-0 -23	-25 -52	3992 5705	14 1	-24 -51
Abd 23	1234221 1609629	12316 16041	468 591	421296 842437	4187 8368	143 283
Abd 24	903079 1172926	9005 11675	336 416	353828 660853	3512 6552	116 211
Abd 25	548652 828023	5460 8225	194 278	249184 453092	2466 4474	74 127
Abd 26	271107 482876	2685 4774	83 140	166983 245906	1644 2402	41 44
Abd 27	5176856 5368721	51742 53633	2045 2095	971251 2573196	9686 25675	363 975
Abd 28	4584203 5006617	45816 50012	1808 1950	1013973 2518001	10113 25124	380 953
Abd 29	4480220 4572711	44776 45672	1766 1776	935464 2368126	9328 23624	348 893
Abd 30	3536752 4038484	35341 40330	1389 1562	967689 2180732	9651 21751	361 818
Abd 31	7530960 7575288	75283 75698	2987 2977	4990784 5403302	49882 53976	1971 2108
Abd 32	8108633 8128575	81060 81231	3218 3198	5225117 5718115	52225 57124	2064 2233
Abd 33	8269979 8292857	82674 82874	3282 3264	5413058 5901129	54104 58954	2139 2306
Abd 34	8305797 8331047	83032 83256	3297 3280	4990889 5648340	49883 56427	1971 2205
Abd 35	37457 61195	348 557	-11 -29	31480 51712	289 461	-13 -33
Abd 36	418213 738928	4156 7335	142 243	225020 410526	2224 4049	64 110
Abd 37	620088 933147	6175 9276	222 320	294359 596218	2917 5906	92 185
Abd 38	2617851 2949848	26152 29444	1021 1127	776653 1534941	7740 15293	285 560
Abd 39	3847717 4021228	38451 40158	1513 1556	1012404 2135249	10098 21296	379 800
Abd 40	8171 11118	56 57	-22 -48	5826 10067	32 45	-23 -50
Abd 41	77174 115705	746 1102	5 -7	54110 91208	515 856	-4 -18
Abd 42	279051 571804	2764 5663	86 176	160974 302480	1584 2968	39 67
Abd 43	988639 1501589	9860 14961	370 548	468694 806483	4661 8009	162 269
Abd 44	2367006 2783328	23644 27779	921 1060	804680 1535298	8021 15296	296 560
Abd 45	3994546 4286882	39919 42814	1572 1662	1104114 2334305	11014 23286	415 880
Abd 46	5677118 6007643	56745 60022	2245 2350	1125482 3118174	11227 31125	424 1193
Abd 47	10228 15044	76 96	-22 -47	20825 30979	182 253	-17 -42
Abd 48	17433 19345	148 139	-19 -45	23159 23747	205 181	-17 -45
Abd 49	2722 3904	1 -16	-25 -51	2324 8586	-3 29	-25 -51
Abd 50	25226 43854	226 384	-16 -35	22764 38048	201 324	-17 -39
Abd 51	98178 184846	956 1794	14 21	92167 142451	895 1367	11 3
Abd 52	252549 584370	2499 5789	75 181	191055 275617	1884 2700	51 56
Abd 53	300699 723098	2981 7176	95 237	212170 322077	2095 3164	59 75

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TABLE II – continued from previous page

Waveform	$\log B_{SN}$					
	Abd PCs			Dim PCs		
	0.2 kpc	2 kpc	10 kpc	0.2 kpc	2 kpc	10 kpc
Abd 54	397660 569598	3950 5641	133 175	183655 354602	1810 3490	48 88
Abd 55	1758913 1797865	17563 17924	678 666	1519403 1614237	15168 16086	582 592
Abd 56	4693130 4785745	46905 47803	1852 1861	4341441 4517106	43388 45114	1711 1753
Abd 57	7167996 7187619	71654 71821	2842 2822	3920590 4420324	39180 44147	1542 1714
Abd 58	9327739 9422148	93251 94167	3705 3716	4882166 5558532	48795 55528	1927 2169
Abd 59	10642260 10811759	106396 108063	4231 4272	5939921 6764015	59373 67583	2350 2652
Abd 60	4589412 4703136	45868 46977	1810 1828	4390539 4550152	43879 45445	1730 1766
Abd 61	266374 432099	2638 4266	81 120	321304 378122	3187 3725	103 97
Abd 62	2899613 3137865	28970 31324	1134 1202	3101836 3166458	30992 31608	1215 1213
Abd 63	-24 139	-26 -53	-26 -53	-24 -55	-26 -58	-26 -54
Abd 64	164009 251830	1614 2464	40 48	60358 152012	577 1464	-2 7
Abd 65	58492 83325	559 778	-2 -20	19876 52159	172 465	-18 -33
Abd 66	12111 19972	95 145	-21 -45	3389 13549	8 79	-24 -48
Abd 67	9678 14010	71 85	-22 -47	12454 13953	98 83	-21 -48
Abd 68	820590 1087365	8180 10819	303 382	338654 545801	3360 5401	110 164
Abd 69	2421153 2721568	24185 27161	943 1036	695158 1581266	6924 15756	252 579
Abd 70	1680029 2305578	16774 23001	646 869	557998 1180260	5553 11746	197 418
Abd 71	1358256 1753902	13556 17484	518 649	494144 926155	4915 9205	172 316
Abd 72	806004 1278482	8034 12730	297 458	371757 596384	3691 5907	123 184
Abd 73	424977 731130	4224 7257	144 239	243045 371137	2404 3654	71 94
Abd 74	4745471 4922984	47429 49175	1872 1916	991941 2485363	9893 24797	371 940
Abd 75	6165689 6559166	61631 65537	2441 2571	908710 3247423	9060 32418	337 1245
Abd 76	6777920 7017175	67753 70117	2685 2754	966497 3182670	9638 31770	360 1219
Abd 77	6714852 6898434	67123 68930	2660 2706	1136862 3210985	11342 32053	429 1231
Abd 78	5972336 6558527	59697 65530	2363 2571	1177327 3044782	11747 30391	445 1164
Abd 79	5953732 6042753	59511 60373	2356 2364	1194309 3003660	11916 29980	451 1147
Abd 80	5274327 5340351	52717 53349	2084 2083	1176285 2753436	11736 27478	444 1047
Abd 81	7778341 7818664	77757 78132	3086 3075	4533010 4865638	45304 48599	1787 1892
Abd 82	8094038 8106517	80914 81011	3212 3190	4957695 5245282	49551 52396	1957 2044
Abd 83	3976089 4014889	39735 40094	1565 1553	3343507 3501991	33409 34964	1312 1347
Abd 84	6397153 6429254	63945 64238	2533 2519	4304266 4624954	43016 46193	1696 1796
Abd 85	8594368 8716845	85918 87114	3412 3434	6083720 6322915	60811 63172	2408 2475
Abd 86	10048445 10080348	100458 100749	3994 3979	6241212 6672460	62386 66668	2471 2615
Abd 87	10258273 10598800	102556 105933	4078 4186	7311128 7776572	73085 77709	2899 3057
Abd 88	47843 68098	452 626	-7 -26	21119 79028	185 733	-17 -22
Abd 89	612952 1094306	6103 10888	219 385	293464 569240	2908 5636	92 174
Abd 90	891567 1516482	8890 15110	331 554	447607 704850	4450 6992	153 228
Abd 91	3333534 3711731	33309 37063	1308 1432	928096 2054077	9255 20484	345 767
Abd 92	5197064 5337407	51945 53319	2053 2082	1248849 2736084	12462 27304	473 1040
Abd 93	11660 15043	90 96	-21 -47	4113 8924	15 33	-24 -50
Abd 94	112848 170339	1102 1649	19 15	69189 120302	666 1146	2 -6
Abd 95	450696 819588	4481 8141	155 275	230761 373339	2281 3677	66 95
Abd 96	1370320 1673262	13677 16678	522 616	487652 904993	4850 8993	169 308
Abd 97	2984653 3108675	29820 31032	1168 1191	795258 1593310	7925 15877	292 583
Abd 98	4445563 4997941	44430 49925	1753 1946	1039628 2421045	10370 24153	390 914
Abd 99	7072761 7206359	70702 72009	2803 2830	1330650 3395902	13279 33902	506 1304
Abd 100	3641 5118	10 -4	-24 -51	4359 8182	17 26	-24 -51
Abd 101	9161 12857	65 73	-22 -48	12761 27687	101 220	-21 -43
Abd 102	8088 10826	55 54	-23 -49	5269 12276	26 66	-24 -49
Abd 103	28518 41261	259 358	-14 -36	18096 41291	155 356	-19 -38
Abd 104	101056 159750	984 1543	15 11	72498 143782	699 1381	3 4
Abd 105	362916 738724	3603 7333	119 243	218867 333423	2162 3277	62 79
Abd 106	452709 898369	4501 8929	155 306	256176 399733	2536 3941	77 106
Dim 1	541079 657736	5385 6523	191 210	598664 689698	5960 6840	214 222
Dim 2	65734 101545	631 960	1 -12	38982 48686	364 430	-10 -34
Dim 3	494564 636700	4920 6312	172 202	36176 471069	336 4654	-11 134
Dim 4	330352 352801	3276 3473	106 88	420180 733863	4174 7282	142 240
Dim 5	337218 461299	3346 4558	109 132	96978 470943	944 4653	13 135

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TABLE II – continued from previous page

Waveform	$\log B_{SN}$ Abd PCs					$\log B_{SN}$ Dim PCs				
	0.2 kpc		2 kpc		10 kpc	0.2 kpc		2 kpc		10 kpc
Dim 6	319361	345870	3167	3404	102 85	349069	651678	3464	6460	114 207
Dim 7	642168	1066407	6395	10609	230 374	705316	1541248	7025	15356	255 562
Dim 8	353184	492396	3506	4869	116 144	411708	736053	4090	7304	138 241
Dim 9	453739	829227	4511	8238	156 279	453866	888597	4511	8829	155 301
Dim 10	112120	118852	1095	1134	19 -5	418620	515751	4160	5101	142 152
Dim 11	756198	892462	7536	8870	277 304	995091	1080213	9925	10746	372 378
Dim 12	437709	657930	4351	6524	149 210	484889	828744	4821	8231	167 278
Dim 13	238928	442471	2363	4370	70 124	681676	839559	6790	8339	247 282
Dim 14	249807	351238	2472	3457	74 88	759682	800758	7571	7951	278 266
Dim 15	655483	1266666	6529	12612	237 454	1604545	1688719	16019	16831	616 621
Dim 16	755602	1352800	7530	13473	276 488	1624533	1819899	16219	18143	624 674
Dim 17	2094893	2578858	20923	25734	812 979	3319075	3848169	33164	38426	1302 1485
Dim 18	1825377	3340304	18227	33348	704 1283	3287292	4026072	32847	40204	1289 1557
Dim 19	2995410	4104541	29928	40990	1172 1589	4593738	4780015	45911	47744	1812 1858
Dim 20	3709177	4189680	37065	41842	1458 1623	5054808	5591805	50522	55862	1996 2183
Dim 21	330323	720249	3277	7147	106 235	896892	1120992	8943	11153	333 394
Dim 22	374425	488185	3718	4827	124 142	904126	924027	9015	9184	336 315
Dim 23	974249	1902111	9716	18966	364 708	1963825	2352409	19612	23468	760 887
Dim 24	1393588	1819383	13910	18139	532 675	2377440	2976719	23748	29710	925 1137
Dim 25	2133164	4607297	21305	46018	828 1790	3420130	4611381	34175	46057	1342 1791
Dim 26	3331042	4613444	33284	46080	1307 1792	5242949	5456139	52403	54505	2071 2129
Dim 27	4651210	5620637	46486	56152	1835 2195	5474571	6617580	54719	66119	2164 2593
Dim 28	6123224	6831766	61206	68263	2424 2680	6970925	7835784	69683	78301	2763 3081
Dim 29	5465850	5871636	54632	58662	2161 2296	6366838	6820180	63642	68145	2521 2674
Dim 30	6441352	7228047	64387	72226	2551 2839	7150632	8230913	71480	82253	2835 3238
Dim 31	5277551	6664885	52749	66594	2085 2613	6090510	6752340	60879	67467	2411 2647
Dim 32	6889784	8415414	68872	84100	2730 3314	7938241	8586983	79356	85813	3150 3381
Dim 33	335646	437757	3330	4323	109 122	202767	372318	2001	3667	55 95
Dim 34	44453	57455	418	520	-8 -30	38933	166363	363	1607	-10 12
Dim 35	454987	667396	4524	6619	156 214	440962	893335	4382	8877	150 303
Dim 36	395419	461635	3928	4562	132 132	457042	651553	4543	6459	157 207
Dim 37	512776	748356	5102	7428	179 246	466994	1222212	4643	12165	160 435
Dim 38	153718	190934	1511	1854	36 23	540199	1032818	5376	10271	190 359
Dim 39	364555	547558	3619	5421	120 166	1077732	1161629	10751	11560	405 411
Dim 40	448560	556104	4459	5506	154 169	1151256	1356394	11486	13507	435 488
Dim 41	1239869	1616129	12372	16106	470 594	2474436	2750817	24718	27451	964 1046
Dim 42	1633713	1977629	16311	19721	628 738	2541546	2643903	25389	26382	991 1004
Dim 43	625763	960341	6231	9549	225 331	1602445	1634715	15998	16290	615 600
Dim 44	749513	840687	7469	8352	274 283	1733486	2087265	17309	20816	668 781
Dim 45	1667379	3142168	16648	31367	641 1204	3327413	3873395	33248	38677	1305 1495
Dim 46	2520487	3190422	25179	31849	982 1223	4173408	4501538	41708	44959	1644 1747
Dim 47	4340766	5115836	43381	51103	1711 1993	6183703	6309374	61811	63037	2448 2470
Dim 48	5373201	5951848	53706	59464	2124 2328	7430816	7532733	74282	75271	2947 2959
Dim 49	5764484	6796219	57619	67908	2280 2666	6546707	6952517	65441	69468	2593 2727
Dim 50	7117091	8428358	71145	84229	2821 3319	7743989	8236333	77414	82307	3072 3241
Dim 51	4329076	5480835	43265	54754	1706 2139	5444746	5679971	54421	56743	2152 2218
Dim 52	5238764	5791213	52361	57857	2070 2264	5807488	6155938	58049	61503	2297 2409
Dim 53	2233166	3628815	22305	36233	867 1399	4316468	4583943	43138	45783	1701 1780
Dim 54	2884282	3258121	28817	32526	1128 1250	4130459	5277109	41278	52715	1626 2057
Dim 55	6508218	7174537	65056	71690	2578 2817	7206941	8625720	72043	86201	2857 3396
Dim 56	6682714	8280553	66801	82751	2647 3259	7932354	9834168	79297	98285	3147 3880
Dim 57	7546582	9692898	75440	96875	2993 3825	9043285	9953395	90407	99477	3592 3927
Dim 58	9953242	12004805	99506	119993	3956 4749	12263023	12953075	122604	129474	4879 5127
Dim 59	7459391	8515962	74568	85105	2958 3354	8649395	9111195	86468	91056	3434 3591
Dim 60	9569282	10486028	95667	104806	3802 4142	10517333	11177737	105147	111721	4181 4417
Dim 61	7610765	8328852	76081	83233	3019 3279	8731293	9121797	87287	91162	3467 3595
Dim 62	10630273	10762947	106276	107574	4226 4252	10282062	10773236	102794	107677	4087 4256
Dim 63	9013386	9186944	90108	91814	3580 3622	9243215	9535898	92406	95302	3672 3760

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TABLE II – continued from previous page

Waveform	$\log B_{SN}$ Abd PCs			$\log B_{SN}$ Dim PCs		
	0.2 kpc	2 kpc	10 kpc	0.2 kpc	2 kpc	10 kpc
Dim 64	8448572 9175575	84460 91701	3354 3617	10346500 10512119	103439 105065	4113 4151
Dim 65	318011 509459	3154 5040	101 151	312351 560782	3096 5551	99 170
Dim 66	113238 129681	1106 1242	19 -1	150010 248329	1474 2427	34 45
Dim 67	433169 635638	4305 6302	147 201	417380 1234254	4146 12286	140 440
Dim 68	240283 317228	2377 3118	70 74	341868 660732	3392 6550	111 211
Dim 69	582328 864225	5797 8587	207 293	478198 1314204	4755 13085	165 472
Dim 70	454492 517050	4518 5116	155 153	482876 725141	4801 7195	167 236
Dim 71	866206 955629	8636 9501	321 329	692698 767642	6901 7620	251 253
Dim 72	166675 194776	1641 1893	41 25	533151 863729	5305 8580	187 292
Dim 73	591570 1019007	5890 10135	211 355	1428702 1453618	14261 14480	546 528
Dim 74	736317 886223	7337 8807	269 302	1387581 1717625	13850 17119	529 633
Dim 75	343339 525624	3407 5202	112 157	827574 1026073	8249 10204	305 356
Dim 76	337082 441685	3345 4362	109 124	995374 1133403	9927 11278	372 399
Dim 77	1011995 1740238	10094 17348	379 643	2104575 2505205	21019 24996	816 948
Dim 78	1337962 1738914	13353 17334	509 643	2231947 2662274	22293 26566	867 1011
Dim 79	1889465 3841548	18868 38360	730 1484	3391065 4289687	33884 42840	1331 1662
Dim 80	3070592 3880695	30680 38752	1203 1499	4891428 5212676	48888 52070	1931 2031
Dim 81	4779231 5336584	47766 53311	1886 2082	6236941 6301969	62343 62963	2469 2467
Dim 82	6042428 6521749	60398 65162	2391 2556	7037730 7487580	70351 74820	2789 2941
Dim 83	5156674 5859775	51541 58543	2037 2291	6369827 6494196	63672 64886	2522 2544
Dim 84	6502615 7530354	65000 75249	2575 2960	7426220 7861730	74236 78561	2945 3091
Dim 85	1039087 2092480	10365 20870	390 784	2576417 2691513	25738 26859	1005 1023
Dim 86	1503675 1891469	15011 18860	576 704	2658658 3313264	26560 33076	1038 1271
Dim 87	4104546 5775120	41019 57696	1616 2257	5384294 5679144	53817 56735	2128 2218
Dim 88	4095882 6270284	40933 62648	1613 2455	5852431 6873704	58498 68680	2315 2696
Dim 89	6590735 6907620	65881 69021	2611 2710	7114944 8183395	71123 81777	2820 3220
Dim 90	8391637 8633369	83890 86279	3331 3401	9265174 9991044	92625 99854	3680 3942
Dim 91	6242621 7725161	62400 77197	2471 3037	7842675 8136300	78401 81307	3111 3201
Dim 92	7692344 9666293	76897 96608	3051 3814	9904184 10103356	99016 100977	3936 3987
Dim 93	6168139 7616586	61655 76111	2442 2994	7698569 7976441	76959 79708	3054 3137
Dim 94	7585530 9005695	75829 90002	3008 3549	8620688 9136819	86181 91312	3423 3601
Dim 95	6371603 6775935	63690 67704	2523 2658	7162468 7533693	71598 75280	2839 2959
Dim 96	8934180 8996020	89316 89905	3548 3546	8268022 8700862	82654 86952	3281 3427
Dim 97	1492979 1531819	14904 15264	572 560	1543726 1753984	15411 17483	592 647
Dim 98	571210 602638	5686 5971	203 188	649347 697142	6467 6915	234 225
Dim 99	526715 774885	5241 7694	185 257	545230 1331706	5425 13260	191 479
Dim 100	186885 223257	1843 2178	49 36	384334 787083	3817 7814	128 261
Dim 101	495757 668222	4931 6627	173 214	1371499 1716362	13689 17107	523 632
Dim 102	736030 806058	7334 8006	269 269	1068565 1317130	10659 13115	402 473
Dim 103	1149165 2026748	11466 20213	434 758	967871 1894416	9653 18888	361 704
Dim 104	2187220 2560191	21846 25547	849 971	3048343 3086629	30457 30810	1194 1181
Dim 105	3023397 4596768	30208 45913	1184 1786	5072402 5838820	50698 58332	2003 2282
Dim 106	4402050 5968941	43994 59635	1735 2335	6366308 7428829	63637 74231	2521 2918
Dim 107	2344280 2842202	23416 28367	912 1084	3854113 4393010	38515 43874	1516 1703
Dim 108	2299953 3805321	22973 37998	894 1469	3805030 4816485	38024 48108	1496 1873
Dim 109	5219285 6920016	52167 69145	2062 2715	7422971 8020259	74203 80146	2943 3154
Dim 110	7401514 7846677	73989 78412	2935 3086	9483651 9658469	94810 96528	3768 3810
Dim 111	7757346 8744901	77547 87394	3077 3445	9077290 9578431	90747 95728	3605 3777
Dim 112	10005950 11456623	100033 114512	3977 4530	11666966 12109181	116643 121035	4641 4790
Dim 113	1853083 3468513	18505 34631	716 1335	1835549 6667531	18329 66619	708 2613
Dim 114	7373322 7745635	73707 77402	2924 3046	8398697 8964721	83961 89592	3334 3532
Dim 115	6027600 6193232	60250 61878	2385 2424	6533736 6686284	65311 66806	2588 2621
Dim 116	5508525 5819546	55059 58141	2178 2275	6085761 6328399	60831 63227	2409 2477
Dim 117	6354257 7686778	63516 76813	2516 3022	7210362 8547157	72077 85415	2858 3365
Dim 118	7299448 8463868	72968 84584	2894 3333	9351561 9935905	93489 99303	3715 3921
Dim 119	10505256 11530149	105026 115247	4176 4559	11905916 13662716	119033 136571	4737 5411
Dim 120	13807542 15351589	138049 153461	5497 6088	15461961 17741223	154593 177355	6159 7043
Dim 121	10598286 13422930	105957 134174	4214 5316	12961862 14139037	129592 141334	5159 5602

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TABLE II – continued from previous page

Waveform	$\log B_{SN}$ Abd PCs						$\log B_{SN}$ Dim PCs					
	0.2 kpc		2 kpc		10 kpc		0.2 kpc		2 kpc		10 kpc	
Dim 122	11751647 14263091	117490 142576	4675 5652	13397680 15097155	133951 150915	5333 5985						
Dim 123	16216717 16481403	162141 164759	6461 6540	16858218 17331967	168556 173264	6717 6879						
Dim 124	17393456 18193010	173908 181875	6932 7224	19721603 19911414	197190 199057	7863 7911						
Dim 125	14255830 16112000	142532 161065	5677 6391	18598262 19227650	185956 192221	7413 7637						
Dim 126	16712317 17934987	167097 179295	6659 7121	20499871 20889696	204972 208840	8174 8302						
Dim 127	13287026 15476342	132844 154708	5289 6137	18246105 19768833	182435 197632	7273 7853						
Dim 128	8318375 11436427	83158 114307	3302 4520	13371554 15739500	133689 157339	5323 6241						

TABLE III: Mapping between the waveform labels used in this study and the actual waveform/model names in the original papers describing the various catalogs. Abd represents the Abdikamalov *et al.* catalog [4, 5], Dim the GW signals from Dimmelmeier *et al.* [1, 6], Mur are the GW signals from Murphy *et al.* [2] and Ott represents the waveforms which were computed by Ott [3] on the basis of the Burrows *et al.* [7] simulations.

Label	Model Name	Label	Model Name	Label	Model Name
Abd 1	highT_AD01	Abd 56	lowT_AD10f1	Dim 5	s11a1o07_LS
Abd 2	highT_AD02	Abd 57	lowT_AD10f2	Dim 6	s11a1o07_Shen
Abd 3	highT_AD03	Abd 58	lowT_AD10f3	Dim 7	s11a1o09_LS
Abd 4	highT_AD04	Abd 59	lowT_AD10f4	Dim 8	s11a1o09_Shen
Abd 5	highT_AD05	Abd 60	lowT_AD11f2	Dim 9	s11a1o13_LS
Abd 6	highT_AD06	Abd 61	lowT_AD12f3	Dim 10	s11a1o13_Shen
Abd 7	highT_AD07	Abd 62	lowT_AD12f4	Dim 11	s11a2o05_LS
Abd 8	highT_AD08	Abd 63	lowT_AD13f4	Dim 12	s11a2o05_Shen
Abd 9	highT_AD09	Abd 64	lowT_AD1f1	Dim 13	s11a2o07_LS
Abd 10	highT_AD010	Abd 65	lowT_AD1f2	Dim 14	s11a2o07_Shen
Abd 11	highT_AD10f1	Abd 66	lowT_AD1f3	Dim 15	s11a2o09_LS
Abd 12	highT_AD10f2	Abd 67	lowT_AD1f4	Dim 16	s11a2o09_Shen
Abd 13	highT_AD10f3	Abd 68	lowT_AD2	Dim 17	s11a2o13_LS
Abd 14	highT_AD10f1	Abd 69	lowT_AD3	Dim 18	s11a2o13_Shen
Abd 15	highT_AD11f2	Abd 70	lowT_AD3f1	Dim 19	s11a2o15_LS
Abd 16	highT_AD12f3	Abd 71	lowT_AD3f2	Dim 20	s11a2o15_Shen
Abd 17	highT_AD12f4	Abd 72	lowT_AD3f3	Dim 21	s11a3o05_LS
Abd 18	highT_AD13f4	Abd 73	lowT_AD3f4	Dim 22	s11a3o05_Shen
Abd 19	highT_AD1f1	Abd 74	lowT_AD4	Dim 23	s11a3o07_LS
Abd 20	highT_AD1f2	Abd 75	lowT_AD5	Dim 24	s11a3o07_Shen
Abd 21	highT_AD1f3	Abd 76	lowT_AD6	Dim 25	s11a3o09_LS
Abd 22	highT_AD1f4	Abd 77	lowT_AD6f1	Dim 26	s11a3o09_Shen
Abd 23	highT_AD3f1	Abd 78	lowT_AD6f2	Dim 27	s11a3o12_LS
Abd 24	highT_AD3f2	Abd 79	lowT_AD6f3	Dim 28	s11a3o12_Shen
Abd 25	highT_AD3f3	Abd 80	lowT_AD6f4	Dim 29	s11a3o13_LS
Abd 26	highT_AD3f4	Abd 81	lowT_AD7	Dim 30	s11a3o13_Shen
Abd 27	highT_AD6f1	Abd 82	lowT_AD8	Dim 31	s11a3o15_LS
Abd 28	highT_AD6f2	Abd 83	lowT_AD9	Dim 32	s11a3o15_Shen
Abd 29	highT_AD6f3	Abd 84	lowT_AD9f1	Dim 33	s15a1o01_LS
Abd 30	highT_AD6f4	Abd 85	lowT_AD9f2	Dim 34	s15a1o01_Shen
Abd 31	highT_AD9f1	Abd 86	lowT_AD9f3	Dim 35	s15a1o05_LS
Abd 32	highT_AD9f2	Abd 87	lowT_AD9f4	Dim 36	s15a1o05_Shen
Abd 33	highT_AD9f3	Abd 88	lowT_AU1	Dim 37	s15a1o07_LS
Abd 34	highT_AD9f4	Abd 89	lowT_AU2	Dim 38	s15a1o07_Shen
Abd 35	highT_AU1	Abd 90	lowT_AU3	Dim 39	s15a1o09_LS
Abd 36	highT_AU2	Abd 91	lowT_AU4	Dim 40	s15a1o09_Shen
Abd 37	highT_AU3	Abd 92	lowT_AU5	Dim 41	s15a1o13_LS
Abd 38	highT_AU4	Abd 93	lowT_DD1	Dim 42	s15a1o13_Shen
Abd 39	highT_AU5	Abd 94	lowT_DD2	Dim 43	s15a2o05_LS
Abd 40	highT_DD1	Abd 95	lowT_DD3	Dim 44	s15a2o05_Shen
Abd 41	highT_DD2	Abd 96	lowT_DD4	Dim 45	s15a2o07_LS
Abd 42	highT_DD3	Abd 97	lowT_DD5	Dim 46	s15a2o07_Shen
Abd 43	highT_DD4	Abd 98	lowT_DD6	Dim 47	s15a2o09_LS
Abd 44	highT_DD5	Abd 99	lowT_DD7	Dim 48	s15a2o09_Shen
Abd 45	highT_DD7	Abd 100	lowT_DU1	Dim 49	s15a2o13_LS
Abd 46	highT_DD7	Abd 101	lowT_DU2	Dim 50	s15a2o13_Shen
Abd 47	highT_DU1	Abd 102	lowT_DU3	Dim 51	s15a2o15_LS
Abd 48	highT_DU2	Abd 103	lowT_DU4	Dim 52	s15a2o15_Shen
Abd 49	highT_DU3	Abd 104	lowT_DU5	Dim 53	s15a3o05_LS
Abd 50	highT_DU4	Abd 105	lowT_DU6	Dim 54	s15a3o05_Shen
Abd 51	highT_DU5	Abd 106	lowT_DU7	Dim 55	s15a3o07_LS
Abd 52	highT_DU6	Dim 1	s11a1o01_LS	Dim 56	s15a3o07_Shen
Abd 53	highT_DU7	Dim 2	s11a1o01_Shen	Dim 57	s15a3o09_LS
Abd 54	lowT_AD1	Dim 3	s11a1o05_LS	Dim 58	s15a3o09_Shen
Abd 55	lowT_AD10	Dim 4	s11a1o05_Shen	Dim 59	s15a3o12_LS

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TABLE III – continued from previous page

Label	Model Name	Label	Model Name	Label	Model Name
Dim 60	s15a3o12_Shen	Dim 104	s40a1o09_Shen	Ott 4	s13.0WHW02
Dim 61	s15a3o13_LS	Dim 105	s40a1o13_LS	Ott 5	s15.0WHW02
Dim 62	s15a3o13_Shen	Dim 106	s40a1o13_Shen	Ott 6	s20.0WHW02
Dim 63	s15a3o15_LS	Dim 107	s40a2o05_LS	Ott 7	s25.0WHW02
Dim 64	s15a3o15_Shen	Dim 108	s40a2o05_Shen	Yak 1	s12_matter
Dim 65	s20a1o01_LS	Dim 109	s40a2o07_LS	Yak 2	s15_matter
Dim 66	s20a1o01_Shen	Dim 110	s40a2o07_Shen	Yak 3	s25_matter
Dim 67	s20a1o05_LS	Dim 111	s40a2o09_LS	OttExtra 1	m15b6
Dim 68	s20a1o05_Shen	Dim 112	s40a2o09_Shen	OttExtra 2	s11WW
Dim 69	s20a1o07_LS	Dim 113	s40a2o13_LS	OttExtra 3	s25WW
Dim 70	s20a1o07_Shen	Dim 114	s40a2o13_Shen	Sch 1	R0E1CA
Dim 71	s20a1o09_LS	Dim 115	s40a2o15_LS	Sch 2	R0E3CA
Dim 72	s20a1o09_Shen	Dim 116	s40a2o15_Shen	Sch 3	R0STCA
Dim 73	s20a1o13_LS	Dim 117	s40a3o05_LS	Sch 4	R1E1CA
Dim 74	s20a1o13_Shen	Dim 118	s40a3o05_Shen	Sch 5	R1E1CA.L
Dim 75	s20a2o05_LS	Dim 119	s40a3o07_LS	Sch 6	R1E1DB
Dim 76	s20a2o05_Shen	Dim 120	s40a3o07_Shen	Sch 7	R1E3CA
Dim 77	s20a2o07_LS	Dim 121	s40a3o09_LS	Sch 8	R1STCA
Dim 78	s20a2o07_Shen	Dim 122	s40a3o09_Shen	Sch 9	R2E1AC
Dim 79	s20a2o09_LS	Dim 123	s40a3o12_LS	Sch 10	R2E3AC
Dim 80	s20a2o09_Shen	Dim 124	s40a3o12_Shen	Sch 11	R2STAC
Dim 81	s20a2o13_LS	Dim 125	s40a3o13_LS	Sch 12	R3E1AC
Dim 82	s20a2o13_Shen	Dim 126	s40a3o13_Shen	Sch 13	R3E1AC.L
Dim 83	s20a2o15_LS	Dim 127	s40a3o15_LS	Sch 14	R3E1CA
Dim 84	s20a2o15_Shen	Dim 128	s40a3o15_Shen	Sch 15	R3E1DB
Dim 85	s20a3o05_LS	Mur 1	12_1.8	Sch 16	R3E2AC
Dim 86	s20a3o05_Shen	Mur 2	20_3.6	Sch 17	R3E3AC
Dim 87	s20a3o07_LS	Mur 3	20_3.4	Sch 18	R3STAC
Dim 88	s20a3o07_Shen	Mur 4	20_3.8	Sch 19	R4E1AC
Dim 89	s20a3o09_LS	Mur 5	40_6.0	Sch 20	R4E1CF
Dim 90	s20a3o09_Shen	Mur 6	40_13.0	Sch 21	R4E1EC
Dim 91	s20a3o12_LS	Mur 7	40_12.0	Sch 22	R4E1FC
Dim 92	s20a3o12_Shen	Mur 8	40_10.0	Sch 23	R4E1FC.L
Dim 93	s20a3o13_LS	Mur 9	12_3.2	Sch 24	R4STAC
Dim 94	s20a3o13_Shen	Mur 10	12_2.8	Sch 25	R5E1AC
Dim 95	s20a3o15_LS	Mur 11	12_2.2	DimExtra 1	s20a1o05_shen
Dim 96	s20a3o15_sh	Mur 12	15_3.4	DimExtra 2	s15a1o03_LS
Dim 97	s40a1o01_LS	Mur 13	15_3.7	DimExtra 3	s40a1o10_LS
Dim 98	s40a1o01_Shen	Mur 14	15_3.2		
Dim 99	s40a1o05_LS	Mur 15	15_4.0		
Dim 100	s40a1o05_Shen	Mur 16	20_3.2		
Dim 101	s40a1o07_LS	Ott 1	nomoto13		
Dim 102	s40a1o07_Shen	Ott 2	nomoto15		
Dim 103	s40a1o09_LS	Ott 3	s11.2WHW02		

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