Sho Fujibayashi Curriculum Vitae

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Institution	Max Planck Institute for Gravitational Physics (Albert-Einstein-Institute)
Address	Wissenschaftsparkpark Potsdam-Golm, Am Mühlenberg 1, D-14476 Potsdam, Germany
Date of Birth	August 2, 1989
Sex	Male
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Field of Research

My research field is the theoretical astrophysics, especially high-energy astrophysical phenomena using numerical simulations. I am interested in phenomena associated with binary neutron star mergers in addition to gravitational waves. My current work is exploring the mass ejection mechanisms, properties of the ejecta from binary neutron star merger, and electromagnetic signals from the ejecta using numerical relativity simulations with relevant physical ingredients, such as neutrinos and magnetic fields. Binary neutron star merger is one of the possible sites for gamma-ray bursts. I also study the possibility using numerical simulations.

Position

Jun. 2018 – present:	Postdoc / Junior Scientist of Max Planck Institute for Gravitational Physics
	(Albert Einstein Institute)
Apr. 2017 – May. 2018:	Postdoc researcher of Yukawa Institute for Theoretical Physics (YITP)
	Host Researcher: Prof. Masaru Shibata
Apr. 2014 – Mar. 2017:	Research Fellowship of JSPS (Japan Society for the Promotion of Science) for
	Young Scientists Department of Physics, Graduate School of Science, Kyoto
	University
	Host Researcher: Prof. Takashi Nakamura and Prof. Takahiro Tanaka

Education

Mar. 26, 2018:	Kyoto University: Ph. D., Physics
	Thesis subject: "Properties of the Ejecta from Binary Neutron Star Merger
	Remnants and Implications for the Electromagnetic Signal Associated with
	GW170817"
	Adviser: Prof. Masaru Shibata
Mar. 24, 2014:	Kyoto University: M. Sc., Physics
	Thesis subject: "Heavy-element Synthesis Processes in the Neutrino-driven
	Winds from Massive Neutron Stars"
	Adviser: Prof. Takashi Nakamura
Mar. 27, 2012:	Kyoto University: B. Sc., Physics

Society Membership

2015 - present: Collaboration Member of KAGRA
2014 - present: The Physical Society of Japan
2015 - present: The Astronomical Society of Japan

Publication list

- Koutarou Kyutoku, <u>Sho Fujibayashi</u>, Kota Hayashi, Kyohei Kawaguchi, Kenta Kiuchi, Masaru Shibata, Masaomi Tanaka, "On the Possibility of GW190425 Being a Black Hole–Neutron Star Binary Merger", The Astrophysical Journal Letters, 890 (2020), L4 DOI: 10.3847/2041-8213/ab6e70
- Sho Fujibayashi, Masaru Shibata, Shinya Wanajo, Kenta Kiuchi, Koutarou Kyutoku, and Yuichiro Sekiguchi, "Mass ejection from disks surrounding a low-mass black hole: Viscous neutrino-radiation hydrodynamics simulation in full general relativity", Physical Review D 101 (2020), 083029 DOI: 10.1103/PhysRevD.101.083029
- Masaru Shibata, Enping Zhou, Kenta Kiuchi, and Sho Fujibayashi, "Constraint on the maximum mass of neutron stars using GW170817 event", Physical Review D 100 (2019), 023015 DOI: 10.1103/PhysRevD.100.023015
- Sho Fujibayashi, Kenta Kiuchi, Nobuya Nishimura, Yuichiro Sekiguchi, and Masaru Shibata, "Mass Ejection from the Remnant of Binary Neutron Star Merger: Viscous-Radiation Hydrodynamics Study", The Astrophysical Journal 860 (2018), 64 DOI: 10.3847/1538-4357/aabafd
- Masaru Shibata, Sho Fujibayashi, Kenta Hotokezaka, Kenta Kiuchi, Koutarou Kyutoku, Yuichiro Sekiguchi, and Masaomi Tanaka, "Modeling GW170817 based on numerical relativity and its implications", Physical Review D 96 (2017), 123012 DOI: 10.1103/PhysRevD.96.123012
- Sho Fujibayashi, Yuichiro Sekiguchi, Kenta Kiuchi, and Masaru Shibata, "Properties of Neutrinodriven Ejecta from the Remnant of Binary Neutron Star Merger : Purely Radiation Hydrodynamics Case", The Astrophysical Journal 846 (2017), 114 DOI: 10.3847/1538-4357/aa8039

- Sho Fujibayashi, Takashi Yoshida, and Yuichiro Sekiguchi, "Alpha-constrained QSE Nucleosynthesis in High-entropy and Fast-expanding material", The Astrophysical Journal 818 (2016), 96 DOI: 10.3847/0004-637X/818/1/96
- Sho Fujibayashi, Takashi Yoshida, and Yuichiro Sekiguchi, "Nucleosynthesis in Neutrino-driven Winds in Hypernovae", The Astrophysical Journal 810 (2015), 115 DOI: 10.1088/0004-637X/810/2/115