

# CURRICULUM VITAE

November 1, 2016

## Makoto Takamoto

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### Personal

Born on June 22, 1983.

Japanese Citizen.

### Education

B.S. Science, Kyoto University, 2007.

M.A. Physics, Kyoto University, 2009.

Ph.D. Physics, Kyoto University, 2012.

### Employment

2009 April – 2012 March, Research Fellowship for Young Scientist of Japan Society for the Promotion of Science (JSPS)

2012 April – 2012 June , Postdoctoral Resarcher of Nagoya University

2012 July – 2013 March, Stipend Reseacher of Max-Planck-Institute für Kernphysik

2013 April –2015 March, Postdoc in Max-Planck-Institute für Kernphysik, as a Postdoctoral Fellowship for Research Abroad of Japan Society for the Promotion of Science (JSPS)

2015 April –, Postdoc in University of Tokyo, as a Research Fellowship for Young Scientists of Japan Society for the Promotion of Science (JSPS)

## Publications

### Journal Articles

1. "Analysis of the Relaxation Process using Non-Relativistic Kinetic Equation"  
M.Takamoto, S.Inutsuka.  
Progress of Theoretical Physics Vol.123, No 5, 903–920, (2010).  
arXiv:1004.0635[OA]
2. "The relativistic kinetic dispersion relation:  
Comparison of the relativistic Bhatnagar-Gross-Krook model and Grad's 14-moment expansion"  
M.Takamoto, S.Inutsuka,  
Physica A Statistical Mechanics and its Applications, Vol. 389, Issue 21, 4580–4603, (2010).  
arXiv:1006.2663[OA]
3. "A New numerical scheme for resistive relativistic MHD using method of characteristics"[OA]  
M.Takamoto, T. Inoue,  
The Astrophysical Journal, Vol. 735, 113–127, (2011).  
arXiv:1105.5683[OA]
4. "A Fast Numerical Scheme for Causal Relativistic Hydrodynamics with Dissipation"  
M.Takamoto, S.Inutsuka,  
Journal of Computational Physics, Vol. 230, 7002–7017, (2011).  
arXiv:1106.1732[OA]
5. "Enhanced Dissipation Rate of Magnetic Field in Striped Pulsar Winds by the Effect of Turbulence"[OA]  
M.Takamoto, T.Inoue, S.Inutsuka,  
The Astrophysical Journal, Vol. 755, 76, (2012).  
arXiv:1206.2087[OA]
6. "EVOLUTION OF RELATIVISTIC PLASMOID CHAINS IN A POYNTING-DOMINATED PLASMA"[OA]  
M.Takamoto,  
The Astrophysical Journal, 775, 50, (2013).  
arXiv:1307.5677[OA]
7. "A new scheme of causal viscous hydrodynamics for relativistic heavy-ion collisions: Riemann solver for quark-gluon plasma"  
Y.Akamatsu, S.Inutsuka, C.Nonaka, M.Takamoto,  
The Journal of Computational Physics, 256, 34, (2013).  
arXiv:1302.1665[OA]
8. "An Alternative Numerical Method for the Stationary Pulsar Magnetospheres in the Force-Free System"[OA]  
Y.Takamori, H.Okawa, M.Takamoto, Y.Suwa,  
Publications of the Astronomical Society of Japan, 66, 25, (2014).  
arXiv:1209.3855[OA]
9. "The Evolution of High Temperature Plasma in Magnetar Magnetospheres and its Implications for Giant Flares"[OA]  
M.Takamoto, S.Kisaka, T.K.Suzuki, T.Terasawa,  
The Astrophysical Journal, 787, 84, (2014).  
arXiv:1404.2766[OA]

10. "Explosive reconnection of the double tearing mode in relativistic plasmas with application to the Crab nebula"  
J. Petri; M. Takamoto; H. Baty; S. Zenitani  
Plasma Phys. Control. Fusion, 57, 014034, (2015).
11. "Rapid Cosmic-ray Acceleration at Perpendicular Shocks in Supernova Remnants"[OA]  
M. Takamoto; John G. Kirk  
The Astrophysical Journal, 809, 29, (2015).  
arXiv:1506.04354[OA]
12. "Thermal synchrotron radiation from RRMHD simulations of the double tearing mode reconnection - Application to the Crab flares"[OA]  
M. Takamoto; J. Pétri; H. Baty  
Monthly Notices of the Royal Astronomical Society, 454, 2972, (2015).  
arXiv:1509.06124[OA]
13. "Turbulent Reconnection in Relativistic Plasmas And Effects of Compressibility"[OA]  
M. Takamoto; T. Inoue; A. Lazarian  
The Astrophysical Journal, 815, 16, (2015).  
arXiv:1509.07703[OA]
14. "Ion and electron dynamics generating the Hall current in the exhaust far downstream of the reconnection x-line"  
K. Fujimoto; M. Takamoto  
Physics of Plasmas, 23, 1, (2016).
15. "Compressible Relativistic Magnetohydrodynamic Turbulence in Magnetically-Dominated Plasmas And Implications for A Strong-Coupling Regime"  
M. Takamoto; A. Lazarian  
The Astrophysical Journal, 831, L11, (2016)  
astro-ph:1610.01373[OA],

### Books

1. "Theory and Applications of Non-Relativistic and Relativistic Turbulent Reconnection"  
Lazarian, A.; Kowal, G.; Takamoto, M.; de Gouveia Dal Pino, E. M.; Cho, J.  
Magnetic Reconnection, Astrophysics and Space Science Library, Volume 427. Springer International Publishing Switzerland, 2016, p. 409  
arXiv:1512.03066[OA]

### Invited Talks in International Conferences

1. "Recent Development of Relativistic Magnetic Reconnection in Poynting-Dominated Magnetohydrodynamic Plasma and Application to the Crab Gamma-Ray Flares"  
M. Takamoto, J. Petri, H. Baty  
41st COSPAR Scientific Assembly  
Istanbul, Turkey, July 30 – August 7, 2016 (cancelled by the coup).
2. "A New Numerical Method for the Relativistic Magnetohydrodynamics with Dissipation and its Applications to High-Energy Phenomena"  
Makoto Takamoto  
"The 6th East-Asian Numerical Astrophysics Meeting (EANAM)"  
Suwon, South Korea, September 15-19, 2014

*Numerical Resorces*

1. Research Projects Using K Computer For the Fiscal Year 2016  
Junior Researcher Promotion Project  
Makoto Takamoto  
"Theoretical Study of 3-dimensional Weibel Instability and Particle Acceleration in Ion-Electron Plasma"