Jérôme Pétri

Assistant professor

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EDUCATION

2013 **Habilitation à diriger des recherches**.
Modeling compact objects : neutron stars and their environment.

1999–2002 **Ph.D.**, *Observatoire astronomique*, Strasbourg.
Global electromagnetic structure of pulsars. (Supervisor : Jean Heyvaerts).

1996–1999 **Engineer school**, *École Nationale Supérieure de Physique*, Strasbourg.

1998–1999 **Master 2 in astrophysics**, *Observatoire astronomique de Strasbourg*.

1996-1997 **Undergraduate in Physics**, *Université Louis Pasteur*, Strasbourg.

CURRENT POSITION

2008–present **Assistant professor**, *Observatoire astronomique de Strasbourg*.

PREVIOUS POSITIONS

2008 **Postdoc**, *Centre d'étude des Environnements Terrestre et Planétaires*, Vélizy & ENS Paris.
Solar wind and Earth magnetosphere interaction.

2004 – 2007 **Postdoc**, *Max-Planck-Institut für Kernphysik*, Heidelberg, Germany.
Emission and reconnection in pulsar winds.

2002 – 2004 **Postdoc**, *Astronomical Institute*, Utrecht University, Netherlands.
Magnetoseismology of accretion discs.

PhD SUPERVISION

oct.2015 – sept.2018 **IdEx financial support**, *Kundu Anu*.
Contribution of multipolar fields to radio and high-energy emission of pulsars.

oct.2017 – sept.2020 **Doctorate school financial support**, *Giraud Quentin*.
General relativistic contibution to radio and high-energy emission of pulsars.

oct.2018 – sept.2021 **Doctorate school financial support**, *Tomczak Ivan*.
Particle acceleration in large amplitude electromagnetic waves.

GRADUATE STUDENT SUPERVISION

2010 **M2 student in astrophysics**, *Strasbourg*, 4 months.

2013 **M2 student in physics**, *IPHC/Cronenbourg.*, 2 months.

2014 **M2 student in astrophysics**, *Strasbourg*, 5 months.

2015 **M2 student in physics and chemistry**, *IPCMS/Cronenbourg*, 4 months.

2016 **M2 student in astrophysics**, *Strasbourg*, 4 months.

2017 **M2 student in astrophysics**, *Strasbourg*, 4 months.

2018 **M2 student in astrophysics**, *Strasbourg*, 4 months.

2019 **M2 student in astrophysics**, *Strasbourg*, 5 months.

POSTDOCTORAL FELLOW SUPERVISION

2014 – 2017 **financial support from ANR-JCJC EMPERE**, 3 year supervision.

2020 – 2021 **financial support from Indo-French centre (CEFIPRA)**, planned 1 year supervision.

KEYWORDS OF MY RESEARCH

- **Compact objects**, *neutron stars, black holes.*
- **Electrodynamics**, *MHD flows, pair creation.*
- **Pulsar magnetospheres**, *emission, reconnection, equilibrium.*
- **Radiation**, *curvature, synchrotron, inverse Compton.*
- **Plasma dynamics**, *particle trapping, transport, instabilities.*

NUMERICAL METHODS

During my research activities, I fully developed myself different numerical codes with and without parallelisation using MPI (C++) and/or GPU (CUDA)

- **Finite differences**, *for the electrosphere of a pulsar.*
- **Finite volumes**, *for the diocotron instability (non neutral plasma).*
- **Pseudo-spectral methods**, *for MHD accretion disk simulations and solution to diocotron instability.*
- **Monte-Carlo method**, *for pair creation in the electrosphere.*
- **PIC (Particles In Cell)**, *for magnetic reconnection and diocotron instability.*
- **test particle code**, *for pulsar emission processes*, parallelized for GPU with CUDA.
- **Pseudo-spectral nodal discontinuous Galerkin**, *for neutron star magnetospheres in general relativity with MPI parallelization.*

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2009 – 2014 **Member of the French Physical Society**, *Plasma division.*

STATUTORY TEACHING

Each year, on average, teaching within winter and summer semester for 192 hours mandatory

L1 **Physics**.
- — introduction to Unix (40h).
- — numerical programming in C (30h).

L3 **Earth and Universe sciences**.
- — Lectures on Mathematics (Fourier analysis, tensor calculus) (24h).
- — Exercises on Mathematics (Fourier analysis, tensor calculus) (24h).

School of **Engineers**.
- — introduction to programming in C/C++ (28h).

M2 **Astrophysics**.
- — stellar physics (17h).
- — high energy astrophysics (10h).
- — practical courses in computational physics (24h).

TEACHING IN GERMAN PRIMARY SCHOOLS

Once a year I give an introductory course in German for primary school on "Das Sonnensystem und die Sterne" in collaboration with German primary school teachers.

INSTITUTIONAL RESPONSIBILITIES

2009 – présent **C2i/Pix referent of licence L1**, *UFR de Physique.*

2009 – présent **Seminar coorganisator**, *Strasburg observatory.*

2010 – présent **Member of the Scientific Experts Committee**, *Strasburg observatory.*

2013 – présent **Member of the M2 astrophysics committee**.

ORGANISATION OF SCIENTIFIC MEETINGS

2014 **SOC of a conference**, *in memory of Jean Heyvaerts*, Paris, november 2014.

2015 **Colloquium about neutron stars**, *General congress of French Physical society*, Strasburg.

2016 **SOC of EPS**, *European Physical Society 44th conference in Belfast, 2017.*

2019 **LOC of VLASOVIA**, *conference on plasma physics in Strasburg, July 2019.*

GRANTS

2012 **2025 €**, *working group on pulsars.*

2013 **5000 €**, *working group on pulsars.*

2013 **244.854 € for an ANR-JCJC**, *duration of 5 years.*

2014 **3000 €**, *working group on pulsars.*

2016 **3000 €**, *working group on pulsars.*

2018 **81.934 €**, *indo-french collaboration under CEFIPRA contract.*

FELLOWSHIPS AND AWARDS

2018-2021 **PEDR**, *doctoral and research supervision bonus..*

2017 **Scientific prize**, *"The hopes of the University of Strasburg"*, France, grant of 10.000 €.

MAJOR COLLABORATIONS

2012 – present **working group on pulsars**.

2016 – present **Partner of ANR-APACHE**, *Kumiko Kotera, Paris.*

HABILITATION COMMITTEE MEMBER

2018 **Reporter**, *Zakaria Meliani*, Paris-Meudon, MHD Simulations..

PHD COMMITTEE MEMBER

2014 **Reporter**, *Nicolas Renault-Tinacci*, CEA Saclay, Phase resolved spectroscopy of gamma-ray pulsars.

2015 **Reporter**, *Thomas Tavernier*, APC Paris, Observation of the Vela pulsar with HESS.

2017 **Reporter**, *Mathieu Sarrat*, IJL Nancy, Physics of Weibel type instabilities.

2017 **Reporter**, *Franck Octau*, Orléans, Exploring the Nançay pulsar radio survey.

LANGUAGE

French **native speaker**.

English **fluent**.

German **very good knowledges**.

PUBLICATIONS AND OUTREACH

55 refereed publications, *rank A*, 46 as first author, 36 as only author.

16 invited talks, *at international conferences.*

49 talks, *at international conferences.*

29 posters, *at international conferences.*

36 seminars, *in european institutes and laboratories.*

2 review papers.

EXHAUSTIVE LIST OF PUBLICATIONS

Rank A papers

[1] Ioannis CONTOPOULOS, Jerome PÉTRI et Petros STEFANOU. “Hybrid numerical simulations of pulsar magnetospheres”. en. In : *MNRAS* 491.4 (fév. 2020), p. 5579-5585. DOI : 10.1093/mnras/stz3242.

[2] Quentin GIRAUD et Jérôme PÉTRI. “General-relativistic pulsar radio and high-energy emission”. en. In : *arXiv :1910.01555 [astro-ph]* (2020). arXiv : 1910.01555.

[3] J. PÉTRI. “A relativistic particle pusher for ultra-strong electromagnetic fields”. In : *ArXiv e-prints* arXiv : 1910.04591 (jan. 2020). arXiv : 1910.04591.

[4] J. PÉTRI. “Radiative pulsar magnetospheres : aligned rotator”. In : *MNRAS* 491 (jan. 2020), p. L46-L50. DOI : 10.1093/mnrasl/slz162.

[5] J. PÉTRI et D. MITRA. “Joint radio and X-ray modelling of PSR J1136+1551”. In : *Monthly Notices of the Royal Astronomical Society* 491 (jan. 2020), p. 80-91. DOI : 10.1093/mnras/stz2974.

[6] Jérôme PÉTRI. “Electrodynamics and Radiation from Rotating Neutron Star Magnetospheres”. en. In : *MNRAS* 6.1 (jan. 2020), p. 15. DOI : 10.3390/universe6010015.

[7] Ivan TOMCZAK et Jérôme PÉTRI. “Particle acceleration in neutron star ultra-strong electromagnetic fields”. In : *arXiv :2007.04797 [astro-ph]* (juil. 2020). arXiv : 2007.04797.

[8] J PÉTRI. “The illusion of neutron star magnetic field estimates”. en. In : *MNRAS* 485.4 (juin 2019), p. 4573-4587. DOI : 10.1093/mnras/stz711.

[9] J. PÉTRI. “Impact of an off-centred dipole on neutron star binaries”. en. In : *MNRAS* 488.3 (sept. 2019), p. 4161-4168. DOI : 10.1093/mnras/stz2021.

[10] J. PÉTRI. “Pulsar gamma-ray emission in the radiation reaction regime”. en. In : *MNRAS* 484.4 (avr. 2019), p. 5669-5691. DOI : 10.1093/mnras/stz360.

[11] J. PÉTRI. “General-relativistic pulsar magnetospheric emission”. en. In : *MNRAS* 477.1 (juin 2018), p. 1035-1064. DOI : 10.1093/mnras/sty620.

[12] Anu KUNDU et Jérôme PÉTRI. “Pulsed emission from a rotating off-centred magnetic dipole in vacuum”. In : *MNRAS* 471.3 (nov. 2017), p. 3359-3377. DOI : 10.1093/mnras/stx1711.

[13] J. PÉTRI. “A fully implicit scheme for numerical integration of the relativistic particle equation of motion”. In : *J. Pl. Ph.* 83.02 (avr. 2017). arXiv : 1612.04563. DOI : 10.1017/S0022377817000307.

[14] J. PÉTRI. “Multipolar electromagnetic fields around neutron stars : general-relativistic vacuum solutions”. In : *MNRAS* 472.3 (déc. 2017), p. 3304-3336. DOI : 10.1093/mnras/stx2147.

[15] J. PÉTRI. “Polarized emission from an off-centred dipole”. In : *MNRAS* 466.1 (mar. 2017), p. L73-L77. DOI : 10.1093/mnrasl/slw234.

[16] J. PÉTRI. “General-relativistic force-free pulsar magnetospheres”. en. In : *Mon Not R Astron Soc* 455.4 (fév. 2016). Publisher : Oxford Academic, p. 3779-3805. DOI : 10.1093/mnras/stv2613.

[17] J. PÉTRI. “Quantum electrodynamical corrections to a magnetic dipole in general relativity”. In : *MNRAS* 456 (mar. 2016), p. 4455-4460. DOI : 10.1093/mnras/stv2967.

[18] J. PÉTRI. “Radiation from an off-centred rotating dipole in vacuum”. In : *MNRAS* 463 (déc. 2016), p. 1240-1268. DOI : 10.1093/mnras/stw2050.

[19] J. PÉTRI. “Strongly magnetized rotating dipole in general relativity”. In : *A&A* 594 (oct. 2016), A112. DOI : 10.1051/0004-6361/201628518.

[20] Jérôme PÉTRI. “Theory of pulsar magnetosphere and wind”. en. In : *J. Pl. Ph.* 82.5 (oct. 2016). DOI : 10.1017/S0022377816000763.

[21] Martin LEMOINE, Kumiko KOTERA et Jérôme PÉTRI. “On ultra-high energy cosmic ray acceleration at the termination shock of young pulsar winds”. en. In : *J. Cosmol. Astropart. Phys.* 2015.07 (2015), p. 016. DOI : 10.1088/1475-7516/2015/07/016.

[22] Iwona MOCHOL et Jérôme PÉTRI. “Very high energy emission as a probe of relativistic magnetic reconnection in pulsar winds”. In : *MNRAS* 449 (avr. 2015), p. L51-L55. DOI : 10.1093/mnrasl/slv018.

[23] J. PÉTRI. “A 3+1 formalism for quantum electrodynamical corrections to Maxwell equations in general relativity”. In : *MNRAS* 451 (août 2015), p. 3581-3586. DOI : 10.1093/mnras/stv1185.

[24] J. PÉTRI. “Effect of geodetic precession on the evolution of pulsar high-energy pulse profiles as derived with the striped-wind model”. In : *A&A* 574 (fév. 2015), A51. DOI : 10.1051/0004-6361/201424289.

[25] J. PÉTRI. “General relativistic monopole magnetosphere of neutron stars : a pseudo-spectral discontinuous Galerkin approach”. In : *MNRAS* 447 (mar. 2015), p. 3170-3188. DOI : 10.1093/mnras/stu2626.

[26] J. PÉTRI. “Multipolar electromagnetic fields around neutron stars : exact vacuum solutions and related properties”. In : *MNRAS* 450 (juin 2015), p. 714-742. DOI : 10.1093/mnras/stv598.

[27] J. PÉTRI et al. “Explosive reconnection of the double tearing mode in relativistic plasmas with application to the Crab nebula”. en. In : *PPCF* 57.1 (2015), p. 014034. DOI : 10.1088/0741-3335/57/1/014034.

[28] M. TAKAMOTO, J. PÉTRI et H. BATY. “Thermal synchrotron radiation from RRMHD simulations of the double tearing mode reconnection - application to the Crab flares”. In : *MNRAS* 454 (déc. 2015), p. 2972-2980. DOI : 10.1093/mnras/stv2163.

[29] Nicolas CROUSEILLES et al. “A new fully two-dimensional conservative semi-Lagrangian method : applications on polar grids, from diocotron instability to ITG turbulence”. en. In : *Eur. Phys. J. D* 68.9 (sept. 2014), p. 1-10. DOI : 10.1140/epjd/e2014-50180-9.

[30] J. PÉTRI. “General-relativistic electromagnetic fields around a slowly rotating neutron star : time-dependent pseudo-spectral simulations”. In : *MNRAS* 439 (mar. 2014), p. 1071-1078. DOI : 10.1093/mnras/stu036.

[31] H. BATY, J. PETRI et S. ZENITANI. “Explosive reconnection of double tearing modes in relativistic plasmas : application to the Crab flares”. en. In : *MNRAS* 436.1 (nov. 2013). arXiv : 1308.0906, p. L20-L24. DOI : 10.1093/mnrasl/slt104.

[32] J. PÉTRI. “General-relativistic electromagnetic fields around a slowly rotating neutron star : stationary vacuum solutions”. In : *MNRAS* 433 (août 2013), p. 986-1014. DOI : 10.1093/mnras/stt798.

[33] J. PÉTRI. “Phase-resolved polarization properties of the pulsar striped wind synchrotron emission”. In : *MNRAS* 434 (sept. 2013), p. 2636-2644. DOI : 10.1093/mnras/stt1214.

[34] J. PÉTRI. “The pulsar force-free magnetosphere linked to its striped wind : time-dependent pseudo-spectral simulations”. In : *MNRAS* 424 (juil. 2012), p. 605-619. DOI : 10.1111/j.1365-2966.2012.21238.x.

[35] Jérôme PÉTRI. “High-energy emission from the pulsar striped wind : a synchrotron model for gamma-ray pulsars”. In : *MNRAS* 424.3 (août 2012), p. 2023-2027. DOI : 10.1111/j.1365-2966.2012.21350.x.

[36] J. PÉTRI. “A unified polar cap/striped wind model for pulsed radio and gamma-ray emission in pulsars”. In : *MNRAS* 412 (avr. 2011), p. 1870-1880. DOI : 10.1111/j.1365-2966.2010.18023.x.

[37] Jérôme PÉTRI. “Constraining the mass and moment of inertia of neutron stars from quasi-periodic oscillations in X-ray binaries”. In : *Ap&SS* 331 (fév. 2011), p. 555-563. DOI : 10.1007/s10509-010-0475-y.

[38] Jérôme PÉTRI et Guillaume DUBUS. “Implication of the striped pulsar wind model for gamma-ray binaries”. In : *MNRAS* 417 (oct. 2011), p. 532-540. DOI : 10.1111/j.1365-2966.2011.19295.x.

[39] J. PÉTRI. “High-energy pulses and phase-resolved spectra by inverse Compton emission in the pulsar striped wind. Application to Geminga”. In : *A&A* 503 (août 2009), p. 13-18. DOI : 10.1051/0004-6361/200811010.

[40] J. PÉTRI. “Non-linear evolution of the diocotron instability in a pulsar electrosphere : two-dimensional particle-in-cell simulations”. In : *A&A* 503 (août 2009), p. 1-12. DOI : 10.1051/0004-6361/200911778.

[41] J. PÉTRI. “A new model for QPOs in accreting black holes : application to the microquasar GRS 1915+105”. en. In : *Ap&SS* 318.3-4 (oct. 2008), p. 181-186. DOI : 10.1007/s10509-008-9916-2.

[42] J. PÉTRI. “The magnetron instability in a pulsar’s cylindrical electrosphere”. In : *A&A* 478 (jan. 2008), p. 31-41. DOI : 10.1051/0004-6361:20078442.

[43] J. PÉTRI. “Relativistic stabilisation of the diocotron instability in a pulsar “cylindrical” electrosphere”. In : *A&A* 469 (juil. 2007), p. 843-855. DOI : 10.1051/0004-6361:20066985.

[44] J. PÉTRI. “The diocotron instability in a pulsar cylindrical electrosphere”. In : *A&A* 464 (mar. 2007), p. 135-142. DOI : 10.1051/0004-6361:20066298.

[45] J. PÉTRI et J. G. KIRK. “Growth rates of the Weibel and tearing mode instabilities in a relativistic pair plasma”. en. In : *PPCF* 49.11 (2007), p. 1885. DOI : 10.1088/0741-3335/49/11/009.

[46] J. PÉTRI et J. G. KIRK. “Numerical solution of the linear dispersion relation in a relativistic pair plasma”. en. In : *PPCF* 49.3 (2007), p. 297. DOI : 10.1088/0741-3335/49/3/008.

[47] J. PÉTRI et Y. LYUBARSKY. “Magnetic reconnection at the termination shock in a striped pulsar wind”. In : *A&A* 473 (oct. 2007), p. 683-700. DOI : 10.1051/0004-6361:20066981.

[48] Jérôme PÉTRI. “Forced oscillations in a hydrodynamical accretion disk and QPOs”. In : *Ap&SS* 302 (avr. 2006), p. 117-139. DOI : 10.1007/s10509-005-9013-8.

[49] J. PÉTRI. “A toy model for coupling accretion disk oscillations to the neutron star spin”. In : *A&A* 443 (déc. 2005), p. 777-780. DOI : 10.1051/0004-6361:20054119.

[50] J. PÉTRI. “An explanation for the kHz-QPO twin peaks separation in slow and fast rotators”. In : *A&A* 439 (août 2005), p. L27-L30. DOI : 10.1051/0004-6361:200500151.

[51] J. PÉTRI. “Forced oscillations in magnetized accretion disks and QPOs”. In : *A&A* 439 (août 2005), p. 443-459. DOI : 10.1051/0004-6361:20041511.

[52] J. PÉTRI et J. G. KIRK. “The Polarization of High-Energy Pulsar Radiation in the Striped Wind Model”. In : *Ap. J.* 627 (juil. 2005), p. L37-L40. DOI : 10.1086/431973.

[53] J. PÉTRI, J. HEYVAERTS et S. BONAZZOLA. “Cross-field charge transport by the diocotron instability in pulsar magnetospheres with gaps”. In : *A&A* 411 (nov. 2003), p. 203-213. DOI : 10.1051/0004-6361:20031239.

[54] J. PÉTRI, J. HEYVAERTS et S. BONAZZOLA. “Diocotron instability in pulsar electrospheres. I. Linear analysis”. In : *A&A* 387 (mai 2002), p. 520-530. DOI : 10.1051/0004-6361:20020442.

[55] J. PÉTRI, J. HEYVAERTS et S. BONAZZOLA. “Global static electrospheres of charged pulsars”. In : *A&A* 384 (mar. 2002), p. 414-432. DOI : 10.1051/0004-6361:20020044.

Rank B papers

[1] Jérôme PÉTRI et John G. KIRK. “Pulsed high-energy emission and phase-resolved spectra by inverse compton scattering in a pulsar striped wind”. In : *International Journal of Modern Physics D* 17.10 (sept. 2008), p. 1969-1976. DOI : 10.1142/S0218271808013649.

[2] Jérôme PÉTRI et Yuri LYUBARSKY. “Magnetic reconnection at the termination shock of a striped pulsar wind”. In : *International Journal of Modern Physics D* 17.10 (sept. 2008), p. 1961-1967. DOI : 10.1142/S0218271808013637.

Review papers

[1] J. G. KIRK, Y. LYUBARSKY et J. PÉTRI. “The Theory of Pulsar Winds and Nebulae”. In : *Astrophysics and Space Science Library*. Sous la dir. de W. BECKER. T. 357. Astrophysics and Space Science Library. 2009, p. 421-+.

[2] J. PÉTRI. “Theory of pulsar’s electrosphere”. In : *EAS Publications Series* 21 (2006), p. 355-382.

Chapter in collections

[1] Jérôme PÉTRI. “Neutron stars : macroscopic objects with quantum electrodynamics properties”. In : *Horizons in World Physics*. T. 298. Nova Science Publishers, 2018.

[2] Jérôme PÉTRI. “A Brief Incursion into the Realm of Pulsars”. In : *Horizons in World Physics*. T. 290. Nova Science Publishers, 2016.

Submitted papers

[1] J. PÉTRI. “A relativistic particle pusher for ultra-strong electromagnetic fields”. In : *ArXiv e-prints* arXiv : 1910.04591 (jan. 2020). arXiv : 1910.04591.

Space mission collaboration

[1] M. FEROCI et al. “The Large Observatory for X-ray Timing (LOFT)”. en. In : *Experimental Astronomy* 34.2 (oct. 2012), p. 415-444. DOI : 10.1007/s10686-011-9237-2.

EXHAUSTIVE LIST OF COMMUNICATIONS

Invited talks

[1] Jérôme PÉTRI. *Testing theories of gravity with neutron star observations*. IRMA, Strasbourg, France, juin 2019.

[2] Jérôme PÉTRI. *General-relativistic pulsar magnetospheric emission*. Osaka, Hyatt Regency Hotel, Japon, mai 2018.

[3] Jérôme PÉTRI. *Neutron stars : macroscopic objects with quantum properties*. Oxford, Université, Angleterre, juil. 2017.

[4] J. PÉTRI. *Pulsar magnetospheres.* Copanello, Italie., juin 2016.

[5] J. PÉTRI. *Pulsar winds and magnetospheres.* Meudon, Observatoire., mai 2016.

[6] J. PÉTRI. *Pulsar winds : theory and observation.* Toulouse, IRAP., mar. 2016.

[7] J. PÉTRI. *Radiating off-centred dipole in vacuum.* Washington, NASA/GSFC, USA, juin 2016.

[8] J. PÉTRI. *Broad band emission of pulsars*. Orléans, France., mai 2015.

[9] J. PÉTRI. *Explosive reconnection of the double tearing mode in relativistic plasmas with application to the Crab nebula.* Relativistic Laboratory Astrophysics, Berlin, Allemagne., nov. 2015.

[10] J. PÉTRI. *Pulsed emission and flaring activity of the Crab pulsar unified through magnetic reconnection in its striped wind ?* Heidelberg, Allemagne, mai 2015.

[11] J. PÉTRI. *Explosive reconnection of the double tearing mode in relativistic plasmas : application to the Crab nebula*. Berlin, Allemagne, juin 2014.

[12] J. PÉTRI. *Les pulsars comme outil de détection des ondes gravitationnelles*. OHP, Saint Michel l'Observatoire, juin 2013.

[13] J. PÉTRI. *Les pulsars*. OHP, Saint Michel l'Observatoire, mai 2011.

[14] J. PÉTRI. *Pulsars and their electromagnetic environment : an approach by PIC simulations*. Lyon, CECAM, ENS, oct. 2010.

[15] J. PÉTRI. *Theory of pulsars and pulsar winds*. Heidelberg, Allemagne, déc. 2010.

[16] J. PÉTRI. *Electrodynamics of neutron star magnetosphere : an example of non-neutral plasma in astrophysics*. New York, Columbia University, juin 2008.

Talks

[1] Jérôme PÉTRI. *A relativistic particle pusher for ultra-strong electromagnetic fields*. EPCMS, Cronenbourg, juil. 2019.

[2] Jérôme PÉTRI. *Pulsar gamma-ray emission in the radiation reaction regime*. Platja d'Aro, Espagne, avr. 2019.

[3] J. PÉTRI. *Multipolar electromagnetic fields around neutron stars : general relativistic vacuum solutions*. Pasadena, USA, juil. 2018.

[4] Jérôme PÉTRI. *General-relativistic pulsar magnetospheric emission*. Bordeaux, juil. 2018.

[5] Jérôme PÉTRI. *Neutron stars : macroscopic objects with quantum properties*. IAP, Paris, oct. 2018.

[6] Jérôme PÉTRI. *Off-centered radiating dipole in vaccum*. Pasadena, USA, juil. 2018.

[7] J. PÉTRI. *Effect of geodetic precession on pulsar high-energy emission.* Le Cap, Afrique du sud, déc. 2017.

[8] J. PÉTRI. *Multipolar electromagnetic fields around neutron stars : general relativistic vacuum solutions*. Le Cap, Afrique du sud, déc. 2017.

[9] Jérôme PÉTRI. *Phase-resolved polarization properties of the pulsar striped wind synchrotron emission*. Strasbourg, nov. 2017.

[10] Jérôme PÉTRI. *Pulsed emission from a rotating off-centred magnetic dipole in vacuum*. Saint Pétersbourg, Russie, juil. 2017.

[11] Jérôme PÉTRI. *Pulsed emission from a rotating off-centred magnetic dipole in vacuum"*. Caen, GANIL, mai 2017.

[12] J. PÉTRI. *Effect of geodetic precession on pulsar high-energy emission.* Genève, Suisse, déc. 2015.

[13] J. PÉTRI. *Explosive Reconnection of the Double Tearing Mode in Relativistic Plasmas : Application to the Crab Nebula*. Cracovie, Pologne, avr. 2015.

[14] J. PÉTRI. *General-relativistic pulsar magnetospheres.* Genève, Suisse, déc. 2015.

[15] J. PÉTRI. *Les étoiles à neutrons : des objets macroscopiques aux propriétés quantiques*. Strasbourg, août 2015.

[16] J. PÉTRI. *Phase-resolved polarization properties of the pulsar striped wind synchrotron emission*. Moscou, Russie, août 2014.

[17] J. PÉTRI. *Pulsar high-energy emission models*. Paris, IAP, France, juil. 2014.

[18] J. PÉTRI. *Towards general relativistic pulsar magnetospheres*. Saint-Petersbourg, Russie, août 2014.

[19] J. PÉTRI. *A unified polar cap/striped wind model for pulsed radio and gamma-ray emission in pulsars*. Turku, Finlande, juil. 2013.

[20] J. PÉTRI. *A unified polar cap/striped wind model for pulsed radio and gamma-ray emission in pulsars*. Madrid, ESAC, Espagne, mai 2013.

[21] J. PÉTRI. *Constraining the mass and moment of inertia of neutron star from kHz-QPO observations in LMXBs*. Turku, Finlande, juil. 2013.

[22] J. PÉTRI. *Relativistic plasmas in high-energy astrophysics*. Nancy, France, nov. 2013.

[23] J. PÉTRI. *The neutron star force-free magnetosphere linked to its wind*. Turku, Finlande, juil. 2013.

[24] J. PÉTRI. *The pulsar force-free magnetosphere*. Orsay, IPN, France, juin 2013.

[25] J. PÉTRI. *A unified polar cap/striped wind model for pulsed radio and gamma-ray emission in pulsars*. Zielona-Gora, Pologne, avr. 2012.

[26] J. PÉTRI. *Constraining the mass and moment of inertia of neutron star from kHz-QPO observations in LMXBs*. Saint-Petersbourg, Russie, juil. 2011.

[27] J. PÉTRI. *Constraining the mass and moment of inertia of neutron star from kHz-QPO observations in LMXBs*. IXO HTRS, Champéry, Suisse. Fév. 2011.

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