

Nicolas Chamel

List of Publications by Year in descending order

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124
papers

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times ranked

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#	ARTICLE	IF	CITATIONS
1	Unified equations of state for cold nonaccreting neutron stars with Brussels-Montreal functionals. III. Inclusion of microscopic corrections to pasta phases. <i>Physical Review C</i> , 2022, 105, .	2.9	14
2	Onset of Electron Captures and Shallow Heating in Magnetars. <i>Universe</i> , 2022, 8, 328.	2.5	1
3	Tidal deformability of crystallized white dwarfs in full general relativity. <i>Physical Review D</i> , 2022, 106, .	4.7	6
4	Entrainment effects in neutron-proton mixtures within the nuclear energy-density functional theory. II. Finite temperatures and arbitrary currents. <i>Physical Review C</i> , 2021, 103, .	2.9	7
5	Role of dense matter in tidal deformations of inspiralling neutron stars and in gravitational waveforms with unified equations of state. <i>Physical Review C</i> , 2021, 103, .	2.9	6
6	Vortex pinning in the superfluid core of relativistic neutron stars. <i>Monthly Notices of the Royal Astronomical Society</i> , 2021, 503, 1407-1417.	4.4	2
7	Heating in Magnetar Crusts from Electron Captures. <i>Universe</i> , 2021, 7, 193.	2.5	7
8	Properties of a quantum vortex in neutron matter at finite temperatures. <i>Physical Review C</i> , 2021, 104, .	2.9	7
9	1S ₀ Pairing Gaps, Chemical Potentials and Entrainment Matrix in Superfluid Neutron-Star Cores for the Brussels-Montreal Functionals. <i>Universe</i> , 2021, 7, 470.	2.5	7
10	Unified equation of state for the outer and inner crusts of magnetars. <i>Journal of Physics: Conference Series</i> , 2020, 1555, 012015.	0.4	0
11	Experimental constraints on shallow heating in accreting neutron-star crusts. <i>Physical Review C</i> , 2020, 102, .	2.9	13
12	Crystallization of the outer crust of a non-accreting neutron star. <i>Astronomy and Astrophysics</i> , 2020, 633, A149.	5.1	28
13	Crystallization of the inner crust of a neutron star and the influence of shell effects. <i>Astronomy and Astrophysics</i> , 2020, 635, A84.	5.1	28
14	Force on a neutron quantized vortex pinned to proton fluxoids in the superfluid core of cold neutron stars. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 493, 382-389.	4.4	11
15	Generalization of the Kutta-Joukowski theorem for the hydrodynamic forces acting on a quantized vortex. <i>International Journal of Modern Physics B</i> , 2020, 34, 2050099.	2.0	4
16	Analytical determination of the structure of the outer crust of a cold nonaccreted neutron star: Extension to strongly quantizing magnetic fields. <i>Physical Review C</i> , 2020, 101, .	2.9	5
17	Unified equations of state for cold nonaccreting neutron stars with Brussels-Montreal functionals. II. Pasta phases in semiclassical approximation. <i>Physical Review C</i> , 2020, 101, .	2.9	38
18	Role of the crust in the tidal deformability of a neutron star within a unified treatment of dense matter. <i>Physical Review C</i> , 2020, 101, .	2.9	15

#	ARTICLE	IF	CITATIONS
19	Vortex pinning in the superfluid core of neutron stars and the rise of pulsar glitches. Monthly Notices of the Royal Astronomical Society: Letters, 2020, 493, L98-L102.	3.3	20
20	Analytical determination of the structure of the outer crust of a cold nonaccreted neutron star. Physical Review C, 2020, 101, .	2.9	12
21	Towards a unified description of magnetar crusts. AIP Conference Proceedings, 2019, , .	0.4	0
22	Role of the symmetry energy on the structure of neutron stars with unified equations of state. AIP Conference Proceedings, 2019, , .	0.4	4
23	Role of the symmetry energy and the neutron-matter stiffness on the tidal deformability of a neutron star with unified equations of state. Physical Review C, 2019, 100, .	2.9	27
24	Role of Landau-Rabi quantization of electron motion on the crust of magnetars within the nuclear energy density functional theory. Physical Review C, 2019, 99, .	2.9	15
25	Stratification of the outer crust of magnetars and nuclear abundances. AIP Conference Proceedings, 2019, , .	0.4	0
26	Entrainment effects in neutron-proton mixtures within the nuclear energy-density functional theory: Low-temperature limit. Physical Review C, 2019, 100, .	2.9	10
27	Crustal heating in accreting neutron stars from the nuclear energy-density functional theory. Astronomy and Astrophysics, 2018, 620, A105.	5.1	34
28	Phases of Dense Matter in Compact Stars. Astrophysics and Space Science Library, 2018, , 337-400.	2.7	53
29	Entrainment in Superfluid Neutron-Star Crusts: Hydrodynamic Description and Microscopic Origin. Journal of Low Temperature Physics, 2017, 189, 328-360.	1.4	32
30	On the maximum mass of magnetized white dwarfs. Monthly Notices of the Royal Astronomical Society, 2017, 469, 95-109.	4.4	25
31	Global numerical simulations of the rise of vortex-mediated pulsar glitches in full general relativity. Monthly Notices of the Royal Astronomical Society, 2017, 464, 4641-4657.	4.4	32
32	Superfluidity and Superconductivity in Neutron Stars. Journal of Astrophysics and Astronomy, 2017, 38, 1.	1.0	58
33	Role of nuclear spin-orbit coupling on the constitution of the outer crust of a nonaccreting neutron star. EPJ Web of Conferences, 2017, 137, 09001.	0.3	2
34	Binary and ternary ionic compounds in the outer crust of accreted neutron stars. Journal of Physics: Conference Series, 2017, 932, 012039.	0.4	4
35	Landau Quantisation of Electron Motion in the Crust of Highly Magnetised Neutron Stars. Progress in Theoretical Chemistry and Physics, 2017, , 181-191.	0.2	3
36	Nuclear induces effects and mass correlations in low and multiply charged helium-like ions. Journal of Physics: Conference Series, 2016, 724, 012048.	0.4	0

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37	Collective excitations in neutron-star crusts. <i>Journal of Physics: Conference Series</i> , 2016, 665, 012065.	0.4	7
38	Latest results of Skyrme-Hartree-Fock-Bogoliubov mass formulas. <i>Journal of Physics: Conference Series</i> , 2016, 665, 012038.	0.4	7
39	Giant pulsar glitches and the inertia of neutron star crusts. <i>Physical Review D</i> , 2016, 94, .	4.7	36
40	Role of the symmetry energy on the neutron-drip transition in accreting and nonaccreting neutron stars. <i>Physical Review C</i> , 2016, 93, .	2.9	17
41	Further explorations of Skyrme-Hartree-Fock-Bogoliubov mass formulas. XVI. Inclusion of self-energy effects in pairing. <i>Physical Review C</i> , 2016, 93, .	2.9	100
42	Electron exchange and polarization effects on electron captures and neutron emissions by nuclei in white dwarfs and neutron stars. <i>Physical Review D</i> , 2016, 93, .	4.7	18
43	Relativistic mean-field mass models. <i>European Physical Journal A</i> , 2016, 52, 1.	2.5	34
44	The LOFT mission concept: a status update. <i>Proceedings of SPIE</i> , 2016, , .	0.8	9
45	Landau quantization and neutron emissions by nuclei in the crust of a magnetar. <i>Journal of Physics: Conference Series</i> , 2016, 724, 012034.	0.4	6
46	Binary and ternary ionic compounds in the outer crust of a cold nonaccreting neutron star. <i>Physical Review C</i> , 2016, 94, .	2.9	28
47	Neutrino mean free path in neutron matter with Brussels-Montreal Skyrme functionals. <i>Journal of Physics: Conference Series</i> , 2016, 665, 012067.	0.4	0
48	Symmetry energy from nuclear masses and neutron-star observations using generalised Skyrme functionals. <i>Journal of Physics: Conference Series</i> , 2016, 665, 012066.	0.4	0
49	Role of Landau quantization on the neutron-drip transition in magnetar crusts. <i>Physical Review C</i> , 2015, 91, .	2.9	29
50	Electron capture instability in magnetic and nonmagnetic white dwarfs. <i>Physical Review D</i> , 2015, 92, .	4.7	24
51	Neutron drip transition in accreting and nonaccreting neutron star crusts. <i>Physical Review C</i> , 2015, 91, .	2.9	43
52	Neutron-star matter within the energy-density functional theory and neutron-star structure. , 2015, , .		7
53	Heat capacity of low-density neutron matter: from quantum to classical regimes. <i>Monthly Notices of the Royal Astronomical Society</i> , 2015, 448, 1887-1892.	4.4	7
54	On the Lie subalgebra of Killingâ€Milne and Killingâ€Cartan vector fields in Newtonian spacetime. <i>International Journal of Modern Physics D</i> , 2015, 24, 1550018.	2.1	4

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55	Role of proton pairing in a semimicroscopic treatment of the inner crust of neutron stars. <i>Physical Review C</i> , 2015, 91, .	2.9	29
56	Brussels–Montreal Nuclear Energy Density Functionals, from Atomic Masses to Neutron Stars. <i>Acta Physica Polonica B</i> , 2015, 46, 349.	0.8	19
57	Constraints on the equation of state of cold dense matter from nuclear physics and astrophysics. <i>EPJ Web of Conferences</i> , 2014, 66, 07005.	0.3	13
58	Maximum strength of the magnetic field in the core of the most massive white dwarfs. <i>Physical Review D</i> , 2014, 90, .	4.7	12
59	Symmetry energy: nuclear masses and neutron stars. <i>European Physical Journal A</i> , 2014, 50, 1.	2.5	39
60	Linear response theory and neutrino mean free path using Brussels-Montreal Skyrme functionals. <i>Physical Review C</i> , 2014, 90, .	2.9	17
61	Plumbing Neutron Stars to New Depths with the Binding Energy of the Exotic Nuclide $Z_{n > 82}$. <i>Physical Review Letters</i> , 2013, 110, 041101.	7.8	129
62	Microscopic mass models for astrophysics. <i>International Journal of Mass Spectrometry</i> , 2013, 349-350, 57-62.	1.5	9
63	Further explorations of Skyrme-Hartree-Fock-Bogoliubov mass formulas. XIII. The 2012 atomic mass evaluation and the symmetry coefficient. <i>Physical Review C</i> , 2013, 88, .	2.9	260
64	Pairing: From Atomic Nuclei to Neutron Star Crusts. , 2013, , 284-296.		5
65	Crustal Entrainment and Pulsar Glitches. <i>Physical Review Letters</i> , 2013, 110, 011101.	7.8	166
66	Low-energy collective excitations in the neutron star inner crust. <i>Physical Review C</i> , 2013, 87, .	2.9	56
67	Stability of super-Chandrasekhar magnetic white dwarfs. <i>Physical Review D</i> , 2013, 88, .	4.7	39
68	Hartree-Fock-Bogoliubov nuclear mass model with 0.50 MeV accuracy based on standard forms of Skyrme and pairing functionals. <i>Physical Review C</i> , 2013, 88, .	2.9	133
69	ON THE MAXIMUM MASS OF NEUTRON STARS. <i>International Journal of Modern Physics E</i> , 2013, 22, 1330018.	1.0	65
70	Phase transitions in dense matter and the maximum mass of neutron stars. <i>Astronomy and Astrophysics</i> , 2013, 553, A22.	5.1	59
71	Analytical representations of unified equations of state for neutron-star matter. <i>Astronomy and Astrophysics</i> , 2013, 560, A48.	5.1	180
72	Neutron star properties with unified equations of state of dense matter. <i>Astronomy and Astrophysics</i> , 2013, 559, A128.	5.1	56

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73	UNIFIED EQUATION OF STATE FOR SUPERNOVA CORES AND NEUTRON STARS USING THE ENERGY-DENSITY FUNCTIONAL THEORY. , 2013, , .		0
74	Unified description of dense matter in neutron stars and magnetars. Proceedings of the International Astronomical Union, 2012, 8, 359-361.	0.0	0
75	Neutron conduction in the inner crust of a neutron star in the framework of the band theory of solids. Physical Review C, 2012, 85, .	2.9	140
76	Publisher's Note: Neutron conduction in the inner crust of a neutron star in the framework of the band theory of solids [Phys. Rev. C 85, 035801 (2012)]. Physical Review C, 2012, 85, .	2.9	1
77	Inner crust of neutron stars with mass-fitted Skyrme functionals. Physical Review C, 2012, 85, .	2.9	115
78	Unified equation of state for neutron stars and supernova cores using the nuclear energy-density functional theory. Journal of Physics: Conference Series, 2012, 342, 012003.	0.4	10
79	How "free" are free neutrons in neutron-star crusts and what does it imply for pulsar glitches?. Proceedings of the International Astronomical Union, 2012, 8, 73-76.	0.0	1
80	Does a hadron-quark phase transition in dense matter preclude the existence of massive neutron stars?. Proceedings of the International Astronomical Union, 2012, 8, 356-358.	0.0	1
81	Properties of the outer crust of strongly magnetized neutron stars from Hartree-Fock-Bogoliubov atomic mass models. Physical Review C, 2012, 86, .	2.9	41
82	De "hypoth"se "toiles aussi denses que les noyaux atomiques " la "couverte fortuite des pulsars. Histoire De La Recherche Contemporaine, 2012, , 160-167.	0.1	0
83	The decompression of the outer neutron star crust and r-process nucleosynthesis. Astronomy and Astrophysics, 2011, 531, A78.	5.1	37
84	A stellar superfluid. Physics Magazine, 2011, 4, .	0.1	3
85	Generalized equation of state for cold superfluid neutron stars. , 2011, , .		0
86	Properties of the outer crust of neutron stars from Hartree-Fock-Bogoliubov mass models. Physical Review C, 2011, 83, .	2.9	115
87	Masses of neutron stars and nuclei. Physical Review C, 2011, 84, .	2.9	57
88	The r-process nucleosynthesis during the decompression of neutronised matter. , 2011, , .		0
89	HFB Mass Models for Nucleosynthesis Applications. Journal of the Korean Physical Society, 2011, 59, 2100-2105.	0.7	2
90	Effects induced by nuclear deformations and electron correlations on the ground-state energy of low and multiply charged helium like ions in high-temperature plasmas. Journal of Physics: Conference Series, 2010, 253, 012075.	0.4	5

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91	Superfluid Dynamics in Neutron Star Crusts. Progress of Theoretical Physics Supplement, 2010, 186, 9-16.	0.1	40
92	Effective contact pairing forces from realistic calculations in infinite homogeneous nuclear matter. Physical Review C, 2010, 82, .	2.9	33
93	Further explorations of Skyrme-Hartree-Fock-Bogoliubov mass formulas. XII. Stiffness and stability of neutron-star matter. Physical Review C, 2010, 82, .	2.9	399
94	Self-interaction errors in nuclear energy density functionals. Physical Review C, 2010, 82, .	2.9	26
95	Unified description of neutron superfluidity in the neutron-star crust with analogy to anisotropic multiband BCS superconductors. Physical Review C, 2010, 81, .	2.9	35
96	Breathing-mode measurements in Sn isotopes and isospin dependence of nuclear incompressibility. Physical Review C, 2010, 82, .	2.9	29
97	Spin and spin-isospin instabilities in asymmetric nuclear matter at zero and finite temperatures using Skyrme functionals. Physical Review C, 2010, 82, .	2.9	38
98	Neutron Drip-Line Topography. , 2009, , .		0
99	Further explorations of Skyrme-Hartree-Fock-Bogoliubov mass formulas. XI. Stabilizing neutron stars against a ferromagnetic collapse. Physical Review C, 2009, 80, .	2.9	106
100	Neutron specific heat in the crust of neutron stars from the nuclear band theory. Physical Review C, 2009, 79, .	2.9	12
101	Hartree-Fock-Bogoliubov Mass Models and the Equation of State of Neutron-Star Crusts. , 2009, , .		3
102	Recent breakthroughs in Skyrme-Hartree-Fock-Bogoliubov mass formulas. European Physical Journal A, 2009, 42, 547.	2.5	14
103	Skyrme-Hartree-Fock-Bogoliubov Nuclear Mass Formulas: Crossing the 0.6 MeV Accuracy Threshold with Microscopically Deduced Pairing. Physical Review Letters, 2009, 102, 152503.	7.8	354
104	Nuclear inputs for nucleosynthesis applications. , 2009, , .		3
105	Further explorations of Skyrme-Hartree-Fock-Bogoliubov mass formulas. IX: Constraint of pairing force to 1S0 neutron-matter gap. Nuclear Physics A, 2008, 812, 72-98.	1.5	101
106	Two-fluid models of superfluid neutron star cores. Monthly Notices of the Royal Astronomical Society, 2008, 388, 737-752.	4.4	53
107	Publisher's Note: Semi-classical equation of state and specific-heat expressions with proton shell corrections for the inner crust of a neutron star [Phys. Rev. C 77, 065805 (2008)]. Physical Review C, 2008, 78, .	2.9	0
108	Semi-classical equation of state and specific-heat expressions with proton shell corrections for the inner crust of a neutron star. Physical Review C, 2008, 77, .	2.9	70

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109	Physics of Neutron Star Crusts. Living Reviews in Relativity, 2008, 11, 10.	26.7	478
110	NEUTRON STAR CRUST BEYOND THE WIGNER-SEITZ APPROXIMATION. , 2008, , .		1
111	The crust of neutron stars. AIP Conference Proceedings, 2007, , .	0.4	3
112	Validity of the Wigner-Seitz approximation in neutron star crust. Physical Review C, 2007, 75, .	2.9	64
113	Effect of entrainment on stress and pulsar glitches in stratified neutron star crust. Monthly Notices of the Royal Astronomical Society, 2006, 368, 796-808.	4.4	40
114	Effective mass of free neutrons in neutron star crust. Nuclear Physics A, 2006, 773, 263-278.	1.5	62
115	Covariant Newtonian and relativistic dynamics of (magneto)-elastic solid model for neutron star crust. General Relativity and Gravitation, 2006, 38, 83-119.	2.0	24
116	Entrainment parameters in a cold superfluid neutron star core. Physical Review C, 2006, 73, .	2.9	63
117	ENTRAINMENT COEFFICIENT AND EFFECTIVE MASS FOR CONDUCTION NEUTRONS IN NEUTRON STAR CRUST: MACROSCOPIC TREATMENT. International Journal of Modern Physics D, 2006, 15, 777-803.	2.1	37
118	Band structure effects for dripped neutrons in neutron star crust. Nuclear Physics A, 2005, 747, 109-128.	1.5	77
119	Entrainment coefficient and effective mass for conduction neutrons in neutron star crust: simple microscopic models. Nuclear Physics A, 2005, 748, 675-697.	1.5	65
120	Effect of BCS pairing on entrainment in neutron superfluid current in neutron star crust. Nuclear Physics A, 2005, 759, 441-464.	1.5	19
121	COVARIANT ANALYSIS OF NEWTONIAN MULTI-FLUID MODELS FOR NEUTRON STARS II: STRESS AND ENERGY TENSORS AND VIRIAL THEOREMS. International Journal of Modern Physics D, 2005, 14, 717-748.	2.1	29
122	COVARIANT ANALYSIS OF NEWTONIAN MULTI-FLUID MODELS FOR NEUTRON STARS III: TRANSVECTIVE, VISCOUS, AND SUPERFLUID DRAG DISSIPATION. International Journal of Modern Physics D, 2005, 14, 749-774.	2.1	27
123	COVARIANT ANALYSIS OF NEWTONIAN MULTI-FLUID MODELS FOR NEUTRON STARS I: MILNE AND CARTAN STRUCTURE AND VARIATIONAL FORMULATION. International Journal of Modern Physics D, 2004, 13, 291-325.	2.1	42
124	Unified equations of state for cold non-accreting neutron stars with Brussels-Montreal functionals. I. Role of symmetry energy. Monthly Notices of the Royal Astronomical Society, 0, , .	4.4	82