DÅ¾evad BelkiÄ

List of Publications by Year
in descending order

116 papers	2,456 citations	218381 26 h-index	276539 41 g-index
120 all docs	120 docs citations	120 times ranked	514 citing authors

#	Article	IF	Citations
1	Four-body methods for high-energy ion-atom collisions. Reviews of Modern Physics, 2008, 80, 249-314.	16.4	139
2	Ion beam transport in tissue-like media using the Monte Carlo code SHIELD-HIT. Physics in Medicine and Biology, 2004, 49, 1933-1958.	1.6	109
3	Critical test of first-order theories for electron transfer in collisions between multicharged ions and atomic hydrogen: The boundary condition problem. Physical Review A, 1987, 36, 1601-1617.	1.0	91
4	Review of theories on ionization in fast ion-atom collisions with prospects for applications to hadron therapy. Journal of Mathematical Chemistry, 2010, 47, 1366-1419.	0.7	74
5	Electron capture by fast protons from helium, nitrogen, and oxygen: The corrected first Born approximation. Physical Review A, 1988, 37, 55-67.	1.0	66
6	Cross sections for electron capture from atomic hydrogen by fully stripped ions. Atomic Data and Nuclear Data Tables, 1992, 51, 59-150.	0.9	57
7	Intermediate ionization continua for double charge exchange at high impact energies. Physical Review A, 1993, 47, 3824-3844.	1.0	55
8	Exact quantification of time signals in PadÃ©-based magnetic resonance spectroscopy. Physics in Medicine and Biology, 2006, 51, 2633-2670.	1.6	52
9	Formation of H-by double charge exchange in fast proton-helium collisions. Physica Scripta, 1992, 45, 35-42.	1.2	50
10	Strikingly stable convergence of the Fast PadÃ© Transform (FPT) for high-resolution parametric and non-parametric signal processing of Lorentzian and non-Lorentzian spectra. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2004, 525, 366-371.	0.7	47
11	The fast PadÃ© transform in magnetic resonance spectroscopy for potential improvements in early cancer diagnostics. Physics in Medicine and Biology, 2005, 50, 4385-4408.	1.6	46
12	In vivomagnetic resonance spectroscopy by the fast PadÃ© transform. Physics in Medicine and Biology, 2006, 51, 1049-1075.	1.6	43
13	Symmetric double charge exchange in fast collisions of bare nuclei with heliumlike atomic systems. Physical Review A, 1993, 47, 189-200.	1.0	40
14	Analytical continuation by numerical means in spectral analysis using the Fast PadÃ© Transform (FPT). Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2004, 525, 372-378.	0.7	40
15	Exponential convergence rate (the spectral convergence) of the fast PadÃ© transform for exact quantification in magnetic resonance spectroscopy. Physics in Medicine and Biology, 2006, 51, 6483-6512.	1.6	39
16	Mathematical modeling of an NMR chemistry problem in ovarian cancer diagnostics. Journal of Mathematical Chemistry, 2008, 43, 395-425.	0.7	39
17	Review of theories on double electron capture in fast ion-atom collisions. Journal of Mathematical Chemistry, 2010, 47, 1420-1467.	0.7	39
18	Electron transfer from hydrogenlike atoms to partially and completely stripped projectiles: CDW approximation. Physica Scripta, 1991, 43, 561-571.	1.2	33

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19	Double charge exchange at high impact energies. Nuclear Instruments & Methods in Physics Research B, 1994, 86, 62-81.	0.6	33
20	Error analysis through residual frequency spectra in the fast PadÃ© transform (FPT). Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2004, 525, 379-386.	0.7	33
21	Two-electron capture from helium by fast Î± particles. Physical Review A, 1994, 49, 3646-3658.	1.0	32
22	A unified formula for the Fourier transform of Slater-type orbitals. Physica Scripta, 1989, 39, 226-229.	1.2	31
23	Electron detachment from the negative hydrogen ion by proton impact. Journal of Physics B: Atomic, Molecular and Optical Physics, 1997, 30, 1731-1745.	0.6	29
24	Fast PadÃ© transform for magnetic resonance imaging and computerized tomography. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 471, 165-169.	0.7	29
25	Exact quantification of time signals from magnetic resonance spectroscopy by the fast PadÃ© transform with applications to breast cancer diagnostics. Journal of Mathematical Chemistry, 2009, 45, 790-818.	0.7	28
26	Unequivocal resolution of multiplets in MR spectra for prostate cancer diagnostics achieved by the fast PadÃ© transform. Journal of Mathematical Chemistry, 2009, 45, 819-858.	0.7	27
27	Four-body corrected first Born approximation for single-electron capture into arbitrary states of energetic projectiles. Physical Review A, 2012, 86, .	1.0	26
28	The general concept of signalâ€“noise separation (SNS): mathematical aspects and implementation in magnetic resonance spectroscopy. Journal of Mathematical Chemistry, 2009, 45, 563-597.	0.7	24
29	In vivo magnetic resonance spectroscopy for ovarian cancer diagnostics: quantification by the fast PadÃ© transform. Journal of Mathematical Chemistry, 2017, 55, 349-405.	0.7	24
30	Exact second-order Born approximation with correct boundary conditions for symmetric charge exchange. Physical Review A, 1991, 43, 4751-4770.	1.0	23
31	Decimated signal diagonalization for obtaining the complete eigenspectra of large matrices. Chemical Physics Letters, 1999, 315, 135-139.	1.2	23
32	Boundary-corrected four-body continuum-intermediate-state method: Single-electron capture from heliumlike atomic systems by fast nuclei. Physical Review A, 2015, 91, .	1.0	22
33	Parametric Analysis of Time Signals and Spectra from Perspectives of Quantum Physics and Chemistry. Advances in Quantum Chemistry, 2011, , 145-260.	0.4	21
34	The potential for practical improvements in cancer diagnostics by mathematically-optimized magnetic resonance spectroscopy. Journal of Mathematical Chemistry, 2011, 49, 2408-2440.	0.7	21
35	Nuclear magnetic resonance study of xenon-131 interacting with surfaces: Effective Liouvillian and spectral analysis. Journal of Chemical Physics, 2000, 113, 1630-1640.	1.2	20
36	Fast PadÃ© transform for optimal quantification of time signals from magnetic resonance spectroscopy. International Journal of Quantum Chemistry, 2005, 105, 493-510.	1.0	20

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37	Molecular imaging in the framework of personalized cancer medicine. Israel Medical Association Journal, 2013, 15, 665-72.	0.1	20
38	PadÃ©â€"Froissart exact signal-noise separation in nuclear magnetic resonance spectroscopy. Journal of Physics B: Atomic, Molecular and Optical Physics, 2011, 44, 125003.	0.6	19
39	Resolution enhancement as a key step towards clinical implementation of PadÃ©-optimized magnetic resonance spectroscopy for diagnostic oncology. Journal of Mathematical Chemistry, 2013, 51, 2608-2637.	0.7	19
40	Electron correlations in single-electron capture into any state of fast projectiles from heliumlike atomic systems. Physical Review A, 2013, 88, .	1.0	19
41	Unequivocal disentangling genuine from spurious information in time signals: clinical relevance in cancer diagnostics through magnetic resonance spectroscopy. Journal of Mathematical Chemistry, 2008, 44, 884-912.	0.7	18
42	Proof-of-the-Concept Study on Mathematically Optimized Magnetic Resonance Spectroscopy for Breast Cancer Diagnostics. Technology in Cancer Research and Treatment, 2015, 14, 277-297.	0.8	18
43	Improving the diagnostic yield of magnetic resonance spectroscopy for pediatric brain tumors through mathematical optimization. Journal of Mathematical Chemistry, 2016, 54, 1461-1513.	0.7	18
44	Explicit extraction of absorption peak positions, widths and heights using higher order derivatives of total shape spectra by nonparametric processing of time signals as complex damped multi-exponentials. Journal of Mathematical Chemistry, 2018, 56, 932-977.	0.7	18
45	Exact quantification by the nonparametric fast PadÃ© transform using only shape estimation of high-order derivatives of envelopes. Journal of Mathematical Chemistry, 2018, 56, 268-314.	0.7	18
46	State-Selective Capture Cross Sections in Proton-Hydrogen and Proton-Helium Collisions at Intermediate and High Energies. Physica Scripta, 1989, T28, 106-111.	1.2	17
47	State-of-the-Art Reviews on Energetic Ion-Atom and Ion-Molecule Collisions. Interdisciplinary Research on Particle Collisions and Quantitative Spectroscopy, 2019, , .	0.5	17
48	Possibilities for improved early breast cancer detection by PadÃ©-optimized magnetic resonance spectroscopy. Israel Medical Association Journal, 2011, 13, 236-43.	0.1	17
49	Single electron detachment from Hâˆ' by proton impact. Nuclear Instruments & Methods in Physics Research B, 1997, 124, 365-376.	0.6	16
50	Validation of reconstructed component spectra from non-parametric derivative envelopes: comparison with component lineshapes from parametric derivative estimations with the solved quantification problem. Journal of Mathematical Chemistry, 2018, 56, 2537-2578.	0.7	16
51	Reformulated impulse approximation (RIA) for charge exchange in fast ion-atom collisions. Physica Scripta, 1996, 53, 414-430.	1.2	15
52	Magnetic resonance spectroscopy with high-resolution and exact quantification in the presence of noise for improving ovarian cancer detection. Journal of Mathematical Chemistry, 2012, 50, 2558-2576.	0.7	15
53	How the fast PadÃ© transform handles noise for MRS data from the ovary: importance for ovarian cancer diagnostics. Journal of Mathematical Chemistry, 2016, 54, 149-185.	0.7	15
54	Quantification by the fast PadÃ© transform of magnetic resonance spectroscopic data encoded at 1.5ÂT: implications for brain tumor diagnostics. Journal of Mathematical Chemistry, 2016, 54, 602-655.	0.7	15

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55	Review of recent applications of the conventional and derivative fast PadÃ© transform for magnetic resonance spectroscopy. Journal of Mathematical Chemistry, 2019, 57, 385-464.	0.7	15
56	Mathematical Optimization of in vivo NMR Chemistry Through the Fast PadÃ© Transform: Potential Relevance for Early Breast Cancer Detection by Magnetic Resonance Spectroscopy. Journal of Mathematical Chemistry, 2006, 40, 85-103.	0.7	14
57	PadÃ© optimization of noise-corrupted magnetic resonance spectroscopic time signals from fibroadenoma of the breast. Journal of Mathematical Chemistry, 2014, 52, 2680-2713.	0.7	14
58	Mathematically-optimized magnetic resonance spectroscopy in breast cancer diagnostics: implications for personalized cancer medicine. Journal of Mathematical Chemistry, 2016, 54, 186-230.	0.7	14
59	Iterative averaging of spectra as a powerful way of suppressing spurious resonances in signal processing. Journal of Mathematical Chemistry, 2017, 55, 304-348.	0.7	14
60	Optimized spectral analysis in magnetic resonance spectroscopy for early tumor diagnostics. Journal of Physics: Conference Series, 2014, 565, 012002.	0.3	13
61	Boundary-corrected four-body continuum-intermediate-state method for charge exchange between hydrogenlike projectiles and atoms. Physical Review A, 2017, 96, .	1.0	13
62	Robust high-resolution quantification of time signals encoded by in vivo magnetic resonance spectroscopy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2018, 878, 99-128.	0.7	13
63	All the trinomial roots, their powers and logarithms from the Lambert series, Bell polynomials and Foxâ€"Wright function: illustration for genome multiplicity in survival of irradiated cells. Journal of Mathematical Chemistry, 2019, 57, 59-106.	0.7	13
64	Vector spherical harmonics and scattering integrals. Physica Scripta, 1992, 45, 9-17.	1.2	12
65	Electron capture by bare projectiles from multi-electron targets. European Physical Journal D, 2018, 72, 1.	0.6	12
66	The Euler T and Lambert W functions in mechanistic radiobiological models with chemical kinetics for repair of irradiated cells. Journal of Mathematical Chemistry, 2018, 56, 2133-2193.	0.7	12
67	Double charge exchange in ionâ€"atom collisions using distorted wave theories with two-electron continuum intermediate states in one or both scattering channels. Journal of Mathematical Chemistry, 2019, 57, 1-58.	0.7	12
68	Feasibility study for applying the lower-order derivative fast PadÃ© transform to measured time signals. Journal of Mathematical Chemistry, 2020, 58, 146-177.	0.7	12
69	Critical validity assessment of theoretical models: charge-exchange at intermediate and high energies. Nuclear Instruments & Methods in Physics Research B, 1999, 154, 220-246.	0.6	11
70	Fast PadÃ© Transform for Exact Quantification of Time Signals in Magnetic Resonance Spectroscopy. Advances in Quantum Chemistry, 2006, , 157-233.	0.4	11
71	Decisive role of mathematical methods in early cancer diagnostics: optimized PadÃ©-based magnetic resonance spectroscopy. Journal of Mathematical Chemistry, 2007, 42, 1-35.	0.7	11
72	The fast PadÃ© transform for noisy magnetic resonance spectroscopic data from the prostate: potential contribution to individualized prostate cancer care. Journal of Mathematical Chemistry, 2016, 54, 707-764.	0.7	11

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73	Derivative NMR spectroscopy for J-coupled multiplet resonances using short time signals (0.5ÂKB) encoded at low magnetic field strengths (1.5T). Part I: water suppressed. Journal of Mathematical Chemistry, 2021, 59, 364-404.	0.7	11
74	Single and double charge exchange in fast ion-atom collisions. Nuclear Instruments & Methods in Physics Research B, 1995, 99, 218-224.	0.6	10
75	Leading Distorted Wave Theories and Computational Methods for Fast Ionâ€"Atom Collisions. Journal of Computational Methods in Sciences and Engineering, 2001, 1, 1-73.	0.1	10
76	Transfer ionization in fast ion-atom collisions: Four-body Born distorted-wave theory. Physical Review A, 2011, 83, .	1.0	10
77	Survival of radiation-damaged cells via mechanism of repair by pool molecules: the Lambert function as the exact analytical solution of coupled kinetic equations. Journal of Mathematical Chemistry, 2014, 52, 1201-1252.	0.7	10
78	Synergism of spectra averaging and extrapolation for quantification of in vivo MRS time signals encoded from the ovary. Journal of Mathematical Chemistry, 2017, 55, 1067-1109.	0.7	10
79	Visualizing hidden components of envelopes non-parametrically in magnetic resonance spectroscopy: Phosphocholine, a breast cancer biomarker. Journal of Mathematical Chemistry, 2017, 55, 1698-1723.	0.7	10
80	Single charge exchange in collisions of energetic nuclei with biomolecules of interest to ion therapy. Zeitschrift Fur Medizinische Physik, 2021, 31, 122-144.	0.6	10
81	Derivative NMR Spectroscopy for J-Coupled Multiplet Resonances using Short Time Signals (0.5KB) Encoded at Low Magnetic Field Strengths (1.5T). Part II: Water Unsuppressed. Journal of Mathematical Chemistry, 2021, 59, 405-443.	0.7	10
82	A meta-analysis of studies using MR spectroscopy for evaluating suspicious lesions after radiation therapy of primary brain tumors. Journal of Mathematical Chemistry, 2012, 50, 2527-2557.	0.7	9
83	Optimized Molecular Imaging through Magnetic Resonance for Improved Target Definition in Radiation Oncology. Biological and Medical Physics Series, 2012, , 411-430.	0.3	9
84	High-Resolution Signal Processing in Magnetic Resonance Spectroscopy for Early Cancer Diagnostics. Advances in Quantum Chemistry, 2011, 62, 243-347.	0.4	9
85	Derivative NMR spectroscopy for J-coupled resonances in analytical chemistry and medical diagnostics. Advances in Quantum Chemistry, 2021, , 95-265.	0.4	9
86	Chapter 6 Quantum Mechanical Methods for Loss-Excitation and Loss-Ionization in Fast Ionâ€"Atom Collisions. Advances in Quantum Chemistry, 2009, , 251-321.	0.4	8
87	Mechanistic Repair-Based PadÃ© Linear-Quadratic Model for Cell Response to Radiation Damage. Advances in Quantum Chemistry, 2013, 65, 407-449.	0.4	8
88	In vivo derivative NMR spectroscopy for simultaneous improvements of resolution and signal-to-noise-ratio: Case study, Glioma. Journal of Mathematical Chemistry, 2021, 59, 2133-2178.	0.7	8
89	In vitro proton magnetic resonance spectroscopy at 14T for benign and malignant ovary: Part I, signal processing by the nonparametric fast PadÃ© transform. Journal of Mathematical Chemistry, 2022, 60, 373-416.	0.7	8
90	Repair of irradiated cells by Michaelisâ€"Menten enzyme catalysis: the Lambert function for integrated rate equations in description of surviving fractions. Journal of Mathematical Chemistry, 2014, 52, 1253-1291.	0.7	7

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91	Encoded in vivo time signals from the ovary in magnetic resonance spectroscopy: poles and zeros as the cornerstone for stability of response functions of systems to external perturbations. Journal of Mathematical Chemistry, 2017, 55, 1110-1157.	0.7	7
92	Robust identification of the cancer biomarker phosphocholine through partitioned envelopes in noisy magnetic resonance spectroscopic data by the non-parametric fast PadÃ© transform. Journal of Mathematical Chemistry, 2017, 55, 2004-2047.	0.7	7
93	Total cross sections in five methods for two-electron capture by alpha particles from helium: CDW-4B, BDW-4B, BCIS-4B, CDW-EIS-4B and CB1-4B. Journal of Mathematical Chemistry, 2020, 58, 1133-1176.	0.7	7
94	High-resolution at 3T for in vivo derivative NMR spectroscopy in medical diagnostics of ovarian tumor: exact quantification by shape estimations. Journal of Mathematical Chemistry, 2021, 59, 2218-2260.	0.7	7
95	Mechanistic description of survival of irradiated cells: repair kinetics in PadÃ© linear-quadratic or differential Michaelisâ€"Menten model. Journal of Mathematical Chemistry, 2013, 51, 2572-2607.	0.7	6
96	Mutual neutralization in H ⁺ â^' H ^{â^'} collisions by electron capture. Europhysics Letters, 2013, 103, 23001.	0.7	6
97	Three-body boundary-corrected continuum-intermediate-state method for single charge exchange with the general transition amplitude <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mo>(</mml:mo><mml:mn>1</mml:mn><mml:mi>s</mml:mi applied to the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>p</mml:mi><mml:mtext>â€"</mml:mtext><mml:mi mathvariant="normal">H. Physical Review A, 2020, 102, .	1.0	6
98	One electron-capture in collisions of fast nuclei with biomolecules of relevance to ion therapy. Advances in Quantum Chemistry, 2021, 84, 267-345.	0.4	6
99	Introduction to Volume 3: Magnetic Resonance Imaging and Spectroscopy. , 2014, , xiii-xvii.		5
100	The Challenge of Ovarian Cancer: Steps Toward Early Detection Through Advanced Signal Processing in Magnetic Resonance Spectroscopy. Israel Medical Association Journal, 2017, 19, 517-525.	0.1	5
101	In vitro proton magnetic resonance spectroscopy at 14T for benign and malignant ovary: Part II, Signal processing by the parametric fast PadÃ© transform. Journal of Mathematical Chemistry, 2022, 60, 1200-1271.	0.7	5
102	Spectroscopic imaging through magnetic resonance for brain tumour diagnostics: Recent achievements, dilemmas and potential solutions via advances in signal processing. Journal of Computational Methods in Sciences and Engineering, 2004, 4, 157-207.	0.1	4
103	Machine accurate quantification in magnetic resonance spectroscopy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 580, 1050-1056.	0.7	4
104	Automatic self-correcting in signal processing for magnetic resonance spectroscopy: noise reduction, resolution improvement and splitting overlapped peaks. Journal of Mathematical Chemistry, 2019, 57, 2082-2109.	0.7	4
105	Exact Analytical Expressions for Any Lorentzian Spectrum in the Fast PadÃ© Transform (FPT). Journal of Computational Methods in Sciences and Engineering, 2003, 3, 109-186.	0.1	3
106	Fast PadÃ© transform in the theory of resonances: exact solution of the harmonic inversion problem. Journal of Physics B: Atomic, Molecular and Optical Physics, 2011, 44, 125002.	0.6	3
107	Asymptotic Convergence in Quantum Scattering Theory. Journal of Computational Methods in Sciences and Engineering, 2001, 1, 353-496.	0.1	2
108	Four-Body Theories for Transfer Ionization in Fast Ion-Atom Collisions. Advances in Quantum Chemistry, 2013, 65, 339-362.	0.4	2

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109	High-Resolution Quantum-Mechanical Signal Processing for in vivo NMR Spectroscopy. Advances in Quantum Chemistry, 2017, 74, 347-379.	0.4	2
110	PadÃ© Based-Magnetic Resonance Spectroscopy (MRS). Journal of Computational Methods in Sciences and Engineering, 2003, 3, 563-733.	0.1	1
111	The Role of High-Energy Ion-Atom/Molecule Collisions in Radiotherapy. Journal of Physics: Conference Series, 2014, 565, 012003.	0.3	1
112	Fast Collisions of Light Ions with Matter. Interdisciplinary Research on Particle Collisions and Quantitative Spectroscopy, 2019, , .	0.5	1
113	Theory of heavy ion collision physics for hadron therapy. Interdisciplinary Research on Particle Collisions and Quantitative Spectroscopy, 2019, , 285-336.	0.5	1
114	Critical Assessment of Theoretical Methods for Li³⁺ Collisions with He at Intermediate and High Impact Energies. Interdisciplinary Research on Particle Collisions and Quantitative Spectroscopy, 2012, , 189-229.	0.5	0
115	Mechanistic Radiobiological Models for Repair of Cellular Radiation Damage. Advances in Quantum Chemistry, 2015, , 163-263.	0.4	0
116	UNIQUE VIRTUES OF THE PADÃ‰ APPROXIMANT FOR HIGH-RESOLUTION SIGNAL PROCESSING. , 2003, , .		0