

DÅ¾evad BelkiÄ

List of Publications by Year in descending order

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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
19	Theory of heavy ion collision physics for hadron therapy. <i>Interdisciplinary Research on Particle Collisions and Quantitative Spectroscopy</i> , 2019, , 285-336.	0.5	1
20	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. <i>Journal of Mathematical Chemistry</i> , 2018, 56, 932-977.	0.7	18
21	Validation of reconstructed component spectra from non-parametric derivative envelopes: comparison with component lineshapes from parametric derivative estimations with the solved quantification problem. <i>Journal of Mathematical Chemistry</i> , 2018, 56, 2537-2578.	0.7	16
22	Robust high-resolution quantification of time signals encoded by in vivo magnetic resonance spectroscopy. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2018, 878, 99-128.	0.7	13
23	Electron capture by bare projectiles from multi-electron targets. <i>European Physical Journal D</i> , 2018, 72, 1.	0.6	12
24	The Euler T and Lambert W functions in mechanistic radiobiological models with chemical kinetics for repair of irradiated cells. <i>Journal of Mathematical Chemistry</i> , 2018, 56, 2133-2193.	0.7	12
25	Exact quantification by the nonparametric fast PadÄ© transform using only shape estimation of high-order derivatives of envelopes. <i>Journal of Mathematical Chemistry</i> , 2018, 56, 268-314.	0.7	18
26	High-Resolution Quantum-Mechanical Signal Processing for in vivo NMR Spectroscopy. <i>Advances in Quantum Chemistry</i> , 2017, 74, 347-379.	0.4	2
27	In vivo magnetic resonance spectroscopy for ovarian cancer diagnostics: quantification by the fast PadÄ© transform. <i>Journal of Mathematical Chemistry</i> , 2017, 55, 349-405.	0.7	24
28	Boundary-corrected four-body continuum-intermediate-state method for charge exchange between hydrogenlike projectiles and atoms. <i>Physical Review A</i> , 2017, 96, .	1.0	13
29	Iterative averaging of spectra as a powerful way of suppressing spurious resonances in signal processing. <i>Journal of Mathematical Chemistry</i> , 2017, 55, 304-348.	0.7	14
30	Synergism of spectra averaging and extrapolation for quantification of in vivo MRS time signals encoded from the ovary. <i>Journal of Mathematical Chemistry</i> , 2017, 55, 1067-1109.	0.7	10
31	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. <i>Journal of Mathematical Chemistry</i> , 2017, 55, 1110-1157.	0.7	7
32	Visualizing hidden components of envelopes non-parametrically in magnetic resonance spectroscopy: Phosphocholine, a breast cancer biomarker. <i>Journal of Mathematical Chemistry</i> , 2017, 55, 1698-1723.	0.7	10
33	Robust identification of the cancer biomarker phosphocholine through partitioned envelopes in noisy magnetic resonance spectroscopic data by the non-parametric fast PadÄ© transform. <i>Journal of Mathematical Chemistry</i> , 2017, 55, 2004-2047.	0.7	7
34	The Challenge of Ovarian Cancer: Steps Toward Early Detection Through Advanced Signal Processing in Magnetic Resonance Spectroscopy. <i>Israel Medical Association Journal</i> , 2017, 19, 517-525.	0.1	5
35	How the fast PadÄ© transform handles noise for MRS data from the ovary: importance for ovarian cancer diagnostics. <i>Journal of Mathematical Chemistry</i> , 2016, 54, 149-185.	0.7	15
36	Improving the diagnostic yield of magnetic resonance spectroscopy for pediatric brain tumors through mathematical optimization. <i>Journal of Mathematical Chemistry</i> , 2016, 54, 1461-1513.	0.7	18

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37	The fast PadÄ© transform for noisy magnetic resonance spectroscopic data from the prostate: potential contribution to individualized prostate cancer care. <i>Journal of Mathematical Chemistry</i> , 2016, 54, 707-764.	0.7	11
38	Quantification by the fast PadÄ© transform of magnetic resonance spectroscopic data encoded at 1.5Ä: implications for brain tumor diagnostics. <i>Journal of Mathematical Chemistry</i> , 2016, 54, 602-655.	0.7	15
39	Mathematically-optimized magnetic resonance spectroscopy in breast cancer diagnostics: implications for personalized cancer medicine. <i>Journal of Mathematical Chemistry</i> , 2016, 54, 186-230.	0.7	14
40	Boundary-corrected four-body continuum-intermediate-state method: Single-electron capture from heliumlike atomic systems by fast nuclei. <i>Physical Review A</i> , 2015, 91, .	1.0	22
41	Proof-of-the-Concept Study on Mathematically Optimized Magnetic Resonance Spectroscopy for Breast Cancer Diagnostics. <i>Technology in Cancer Research and Treatment</i> , 2015, 14, 277-297.	0.8	18
42	Mechanistic Radiobiological Models for Repair of Cellular Radiation Damage. <i>Advances in Quantum Chemistry</i> , 2015, , 163-263.	0.4	0
43	Survival of radiation-damaged cells via mechanism of repair by pool molecules: the Lambert function as the exact analytical solution of coupled kinetic equations. <i>Journal of Mathematical Chemistry</i> , 2014, 52, 1201-1252.	0.7	10
44	PadÄ© optimization of noise-corrupted magnetic resonance spectroscopic time signals from fibroadenoma of the breast. <i>Journal of Mathematical Chemistry</i> , 2014, 52, 2680-2713.	0.7	14
45	Repair of irradiated cells by Michaelis-Menten enzyme catalysis: the Lambert function for integrated rate equations in description of surviving fractions. <i>Journal of Mathematical Chemistry</i> , 2014, 52, 1253-1291.	0.7	7
46	Introduction to Volume 3: Magnetic Resonance Imaging and Spectroscopy. , 2014, , xiii-xvii.		5
47	The Role of High-Energy Ion-Atom/Molecule Collisions in Radiotherapy. <i>Journal of Physics: Conference Series</i> , 2014, 565, 012003.	0.3	1
48	Optimized spectral analysis in magnetic resonance spectroscopy for early tumor diagnostics. <i>Journal of Physics: Conference Series</i> , 2014, 565, 012002.	0.3	13
49	Four-Body Theories for Transfer Ionization in Fast Ion-Atom Collisions. <i>Advances in Quantum Chemistry</i> , 2013, 65, 339-362.	0.4	2
50	Mechanistic Repair-Based PadÄ© Linear-Quadratic Model for Cell Response to Radiation Damage. <i>Advances in Quantum Chemistry</i> , 2013, 65, 407-449.	0.4	8
51	Mechanistic description of survival of irradiated cells: repair kinetics in PadÄ© linear-quadratic or differential Michaelis-Menten model. <i>Journal of Mathematical Chemistry</i> , 2013, 51, 2572-2607.	0.7	6
52	Resolution enhancement as a key step towards clinical implementation of PadÄ©-optimized magnetic resonance spectroscopy for diagnostic oncology. <i>Journal of Mathematical Chemistry</i> , 2013, 51, 2608-2637.	0.7	19
53	Electron correlations in single-electron capture into any state of fast projectiles from heliumlike atomic systems. <i>Physical Review A</i> , 2013, 88, .	1.0	19
54	Mutual neutralization in H ⁺ H ⁺ collisions by electron capture. <i>Europhysics Letters</i> , 2013, 103, 23001.	0.7	6

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55	Molecular imaging in the framework of personalized cancer medicine. Israel Medical Association Journal, 2013, 15, 665-72.	0.1	20
56	Critical Assessment of Theoretical Methods for Li^{3+} Collisions with He at Intermediate and High Impact Energies. Interdisciplinary Research on Particle Collisions and Quantitative Spectroscopy, 2012, , 189-229.	0.5	0
57	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
58	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
59	Four-body corrected first Born approximation for single-electron capture into arbitrary states of energetic projectiles. Physical Review A, 2012, 86, .	1.0	26
60	Optimized Molecular Imaging through Magnetic Resonance for Improved Target Definition in Radiation Oncology. Biological and Medical Physics Series, 2012, , 411-430.	0.3	9
61	Transfer ionization in fast ion-atom collisions: Four-body Born distorted-wave theory. Physical Review A, 2011, 83, .	1.0	10
62	Parametric Analysis of Time Signals and Spectra from Perspectives of Quantum Physics and Chemistry. Advances in Quantum Chemistry, 2011, , 145-260.	0.4	21
63	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
64	PadÄ©“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
65	Fast PadÄ© 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
66	High-Resolution Signal Processing in Magnetic Resonance Spectroscopy for Early Cancer Diagnostics. Advances in Quantum Chemistry, 2011, 62, 243-347.	0.4	9
67	Possibilities for improved early breast cancer detection by PadÄ©-optimized magnetic resonance spectroscopy. Israel Medical Association Journal, 2011, 13, 236-43.	0.1	17
68	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
69	Review of theories on double electron capture in fast ion-atom collisions. Journal of Mathematical Chemistry, 2010, 47, 1420-1467.	0.7	39
70	The general concept of signal“noise separation (SNS): mathematical aspects and implementation in magnetic resonance spectroscopy. Journal of Mathematical Chemistry, 2009, 45, 563-597.	0.7	24
71	Exact quantification of time signals from magnetic resonance spectroscopy by the fast PadÄ© transform with applications to breast cancer diagnostics. Journal of Mathematical Chemistry, 2009, 45, 790-818.	0.7	28
72	Unequivocal resolution of multiplets in MR spectra for prostate cancer diagnostics achieved by the fast PadÄ© transform. Journal of Mathematical Chemistry, 2009, 45, 819-858.	0.7	27

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73	Chapter 6 Quantum Mechanical Methods for Loss-Excitation and Loss-Ionization in Fast Ion-Atom Collisions. <i>Advances in Quantum Chemistry</i> , 2009, , 251-321.	0.4	8
74	Mathematical modeling of an NMR chemistry problem in ovarian cancer diagnostics. <i>Journal of Mathematical Chemistry</i> , 2008, 43, 395-425.	0.7	39
75	Unequivocal disentangling genuine from spurious information in time signals: clinical relevance in cancer diagnostics through magnetic resonance spectroscopy. <i>Journal of Mathematical Chemistry</i> , 2008, 44, 884-912.	0.7	18
76	Four-body methods for high-energy ion-atom collisions. <i>Reviews of Modern Physics</i> , 2008, 80, 249-314.	16.4	139
77	Decisive role of mathematical methods in early cancer diagnostics: optimized PadÅ©-based magnetic resonance spectroscopy. <i>Journal of Mathematical Chemistry</i> , 2007, 42, 1-35.	0.7	11
78	Machine accurate quantification in magnetic resonance spectroscopy. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2007, 580, 1050-1056.	0.7	4
79	Fast PadÅ© Transform for Exact Quantification of Time Signals in Magnetic Resonance Spectroscopy. <i>Advances in Quantum Chemistry</i> , 2006, , 157-233.	0.4	11
80	Mathematical Optimization of in vivo NMR Chemistry Through the Fast PadÅ© Transform: Potential Relevance for Early Breast Cancer Detection by Magnetic Resonance Spectroscopy. <i>Journal of Mathematical Chemistry</i> , 2006, 40, 85-103.	0.7	14
81	Exponential convergence rate (the spectral convergence) of the fast PadÅ© transform for exact quantification in magnetic resonance spectroscopy. <i>Physics in Medicine and Biology</i> , 2006, 51, 6483-6512.	1.6	39
82	Exact quantification of time signals in PadÅ©-based magnetic resonance spectroscopy. <i>Physics in Medicine and Biology</i> , 2006, 51, 2633-2670.	1.6	52
83	In vivomagnetic resonance spectroscopy by the fast PadÅ© transform. <i>Physics in Medicine and Biology</i> , 2006, 51, 1049-1075.	1.6	43
84	Fast PadÅ© transform for optimal quantification of time signals from magnetic resonance spectroscopy. <i>International Journal of Quantum Chemistry</i> , 2005, 105, 493-510.	1.0	20
85	The fast PadÅ© transform in magnetic resonance spectroscopy for potential improvements in early cancer diagnostics. <i>Physics in Medicine and Biology</i> , 2005, 50, 4385-4408.	1.6	46
86	Spectroscopic imaging through magnetic resonance for brain tumour diagnostics: Recent achievements, dilemmas and potential solutions via advances in signal processing. <i>Journal of Computational Methods in Sciences and Engineering</i> , 2004, 4, 157-207.	0.1	4
87	Strikingly stable convergence of the Fast PadÅ© Transform (FPT) for high-resolution parametric and non-parametric signal processing of Lorentzian and non-Lorentzian spectra. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2004, 525, 366-371.	0.7	47
88	Analytical continuation by numerical means in spectral analysis using the Fast PadÅ© Transform (FPT). <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2004, 525, 372-378.	0.7	40
89	Error analysis through residual frequency spectra in the fast PadÅ© transform (FPT). <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2004, 525, 379-386.	0.7	33
90	Ion beam transport in tissue-like media using the Monte Carlo code SHIELD-HIT. <i>Physics in Medicine and Biology</i> , 2004, 49, 1933-1958.	1.6	109

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91	PadÄ© Based-Magnetic Resonance Spectroscopy (MRS). Journal of Computational Methods in Sciences and Engineering, 2003, 3, 563-733.	0.1	1
92	Exact Analytical Expressions for Any Lorentzian Spectrum in the Fast PadÄ© Transform (FPT). Journal of Computational Methods in Sciences and Engineering, 2003, 3, 109-186.	0.1	3
93	UNIQUE VIRTUES OF THE PADÄ% APPROXIMANT FOR HIGH-RESOLUTION SIGNAL PROCESSING. , 2003, , .		0
94	Asymptotic Convergence in Quantum Scattering Theory. Journal of Computational Methods in Sciences and Engineering, 2001, 1, 353-496.	0.1	2
95	Leading Distorted Wave Theories and Computational Methods for Fast IonÄ”Atom Collisions. Journal of Computational Methods in Sciences and Engineering, 2001, 1, 1-73.	0.1	10
96	Fast PadÄ© 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
97	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
98	Decimated signal diagonalization for obtaining the complete eigenspectra of large matrices. Chemical Physics Letters, 1999, 315, 135-139.	1.2	23
99	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
100	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
101	Single electron detachment from HÄ” by proton impact. Nuclear Instruments & Methods in Physics Research B, 1997, 124, 365-376.	0.6	16
102	Reformulated impulse approximation (RIA) for charge exchange in fast ion-atom collisions. Physica Scripta, 1996, 53, 414-430.	1.2	15
103	Single and double charge exchange in fast ion-atom collisions. Nuclear Instruments & Methods in Physics Research B, 1995, 99, 218-224.	0.6	10
104	Two-electron capture from helium by fast $\hat{L}\pm$ particles. Physical Review A, 1994, 49, 3646-3658.	1.0	32
105	Double charge exchange at high impact energies. Nuclear Instruments & Methods in Physics Research B, 1994, 86, 62-81.	0.6	33
106	Intermediate ionization continua for double charge exchange at high impact energies. Physical Review A, 1993, 47, 3824-3844.	1.0	55
107	Symmetric double charge exchange in fast collisions of bare nuclei with heliumlike atomic systems. Physical Review A, 1993, 47, 189-200.	1.0	40
108	Vector spherical harmonics and scattering integrals. Physica Scripta, 1992, 45, 9-17.	1.2	12

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109	Formation of H-by double charge exchange in fast proton-helium collisions. <i>Physica Scripta</i> , 1992, 45, 35-42.	1.2	50
110	Cross sections for electron capture from atomic hydrogen by fully stripped ions. <i>Atomic Data and Nuclear Data Tables</i> , 1992, 51, 59-150.	0.9	57
111	Exact second-order Born approximation with correct boundary conditions for symmetric charge exchange. <i>Physical Review A</i> , 1991, 43, 4751-4770.	1.0	23
112	Electron transfer from hydrogenlike atoms to partially and completely stripped projectiles: CDW approximation. <i>Physica Scripta</i> , 1991, 43, 561-571.	1.2	33
113	A unified formula for the Fourier transform of Slater-type orbitals. <i>Physica Scripta</i> , 1989, 39, 226-229.	1.2	31
114	State-Selective Capture Cross Sections in Proton-Hydrogen and Proton-Helium Collisions at Intermediate and High Energies. <i>Physica Scripta</i> , 1989, T28, 106-111.	1.2	17
115	Electron capture by fast protons from helium, nitrogen, and oxygen: The corrected first Born approximation. <i>Physical Review A</i> , 1988, 37, 55-67.	1.0	66
116	Critical test of first-order theories for electron transfer in collisions between multicharged ions and atomic hydrogen: The boundary condition problem. <i>Physical Review A</i> , 1987, 36, 1601-1617.	1.0	91