

K Birgitta Whaley

List of Publications by Year in descending order

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152
papers

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41344

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168
docs citations

168
times ranked

6868
citing authors

#	ARTICLE	IF	CITATIONS
1	Mutual information scaling for tensor network machine learning. <i>Machine Learning: Science and Technology</i> , 2022, 3, 015017.	5.0	8
2	Interplay of vibration- and environment-assisted energy transfer. <i>New Journal of Physics</i> , 2022, 24, 033032.	2.9	2
3	Machine learning for continuous quantum error correction on superconducting qubits. <i>New Journal of Physics</i> , 2022, 24, 063019.	2.9	9
4	Topological quantum interference in a pumped Su-Schrieffer-Heeger lattice. <i>Physical Review A</i> , 2022, 105, .	2.5	2
5	Real-Time Evolution for Ultracompact Hamiltonian Eigenstates on Quantum Hardware. <i>PRX Quantum</i> , 2022, 3, .	9.2	24
6	Dynamics of photosynthetic light harvesting systems interacting with N-photon Fock states. <i>Journal of Chemical Physics</i> , 2022, 156, .	3.0	8
7	Efficient and noise resilient measurements for quantum chemistry on near-term quantum computers. <i>Npj Quantum Information</i> , 2021, 7, .	6.7	118
8	Are multi-quasiparticle interactions important in molecular ionization?. <i>Journal of Chemical Physics</i> , 2021, 154, 121101.	3.0	19
9	Robust in practice: Adversarial attacks on quantum machine learning. <i>Physical Review A</i> , 2021, 103, .	2.5	12
10	Continuous quantum error correction for evolution under time-dependent Hamiltonians. <i>Physical Review A</i> , 2021, 103, .	2.5	7
11	Efficient phase-factor evaluation in quantum signal processing. <i>Physical Review A</i> , 2021, 103, .	2.5	39
12	Unraveling excitation energy transfer assisted by collective behaviors of vibrations. <i>New Journal of Physics</i> , 2021, 23, 073012.	2.9	6
13	Software for the frontiers of quantum chemistry: An overview of developments in the Q-Chem 5 package. <i>Journal of Chemical Physics</i> , 2021, 155, 084801.	3.0	518
14	Virtual Distillation for Quantum Error Mitigation. <i>Physical Review X</i> , 2021, 11, .	8.9	71
15	The Ground State Electronic Energy of Benzene. <i>Journal of Physical Chemistry Letters</i> , 2020, 11, 8922-8929.	4.6	90
16	Optimality of feedback control for qubit purification under inefficient measurement. <i>Physical Review A</i> , 2020, 102, .	2.5	3
17	Error-correcting Bacon-Shor code with continuous measurement of noncommuting operators. <i>Physical Review A</i> , 2020, 102, .	2.5	8
18	Efficient hybridization fitting for dynamical mean-field theory via semi-definite relaxation. <i>Physical Review B</i> , 2020, 101, .	3.2	18

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19	A non-orthogonal variational quantum eigensolver. <i>New Journal of Physics</i> , 2020, 22, 073009.	2.9	82
20	Modern Approaches to Exact Diagonalization and Selected Configuration Interaction with the Adaptive Sampling CI Method. <i>Journal of Chemical Theory and Computation</i> , 2020, 16, 2139-2159.	5.3	90
21	Exploiting chemistry and molecular systems for quantum information science. <i>Nature Reviews Chemistry</i> , 2020, 4, 490-504.	30.2	247
22	CASSCF with Extremely Large Active Spaces Using the Adaptive Sampling Configuration Interaction Method. <i>Journal of Chemical Theory and Computation</i> , 2020, 16, 2340-2354.	5.3	85
23	Quantum proportional-integral (PI) control. <i>New Journal of Physics</i> , 2020, 22, 113014.	2.9	5
24	Locally optimal measurement-based quantum feedback with application to multiqubit entanglement generation. <i>Physical Review A</i> , 2020, 102, .	2.5	11
25	What Levels of Coupled Cluster Theory Are Appropriate for Transition Metal Systems? A Study Using Near-Exact Quantum Chemical Values for 3d Transition Metal Binary Compounds. <i>Journal of Chemical Theory and Computation</i> , 2019, 15, 5370-5385.	5.3	42
26	Dynamical mean field theory simulations with the adaptive sampling configuration interaction method. <i>Physical Review B</i> , 2019, 100, .	3.2	21
27	Towards quantum machine learning with tensor networks. <i>Quantum Science and Technology</i> , 2019, 4, 024001.	5.8	181
28	Generalized Unitary Coupled Cluster Wave functions for Quantum Computation. <i>Journal of Chemical Theory and Computation</i> , 2019, 15, 311-324.	5.3	260
29	Single-photon absorption by single photosynthetic light-harvesting complexes. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2018, 51, 054002.	1.5	29
30	Quantum phases of dipolar rotors on two-dimensional lattices. <i>Journal of Chemical Physics</i> , 2018, 148, 102338.	3.0	10
31	Molecular Mechanics Simulations and Improved Tight-Binding Hamiltonians for Artificial Light Harvesting Systems: Predicting Geometric Distributions, Disorder, and Spectroscopy of Chromophores in a Protein Environment. <i>Journal of Physical Chemistry B</i> , 2018, 122, 12292-12301.	2.6	3
32	Higher-Energy Charge Transfer States Facilitate Charge Separation in Donor-acceptor Molecular Dyads. <i>Journal of Physical Chemistry C</i> , 2017, 121, 13043-13051.	3.1	13
33	Using coherence to enhance function in chemical and biophysical systems. <i>Nature</i> , 2017, 543, 647-656.	27.8	477
34	What is the optimal way to prepare a Bell state using measurement and feedback?. <i>Quantum Science and Technology</i> , 2017, 2, 044006.	5.8	14
35	Optimized pulses for Raman excitation through the continuum: Verification using the multiconfigurational time-dependent Hartree-Fock method. <i>Physical Review A</i> , 2017, 96, .	2.5	6
36	A deterministic alternative to the full configuration interaction quantum Monte Carlo method. <i>Journal of Chemical Physics</i> , 2016, 145, 044112.	3.0	218

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37	Long-range energy transport in photosystem II. <i>Journal of Chemical Physics</i> , 2016, 144, 245101.	3.0	26
38	Quantum dynamics of simultaneously measured non-commuting observables. <i>Nature</i> , 2016, 538, 491-494.	27.8	104
39	Backaction-driven, robust, steady-state long-distance qubit entanglement over lossy channels. <i>Physical Review A</i> , 2016, 94, .	2.5	18
40	Probability-current analysis of energy transport in open quantum systems. <i>Physical Review E</i> , 2016, 93, 012128.	2.1	12
41	Path integral Monte Carlo simulation of global and local superfluidity in liquid ^4He reservoirs separated by nanoscale apertures. <i>Physical Review B</i> , 2016, 94, .	3.2	4
42	Laser pulses for coherent xuv Raman excitation. <i>Physical Review A</i> , 2015, 92, .	2.5	9
43	Continuous joint measurement and entanglement of qubits in remote cavities. <i>Physical Review A</i> , 2015, 92, .	2.5	26
44	Deterministic generation of remote entanglement with active quantum feedback. <i>Physical Review A</i> , 2015, 92, .	2.5	26
45	Photoactivated biological processes as quantum measurements. <i>Physical Review E</i> , 2015, 91, 022714.	2.1	7
46	Coherent and Incoherent Contributions to Charge Separation in Multichromophore Systems. <i>Journal of Physical Chemistry C</i> , 2015, 119, 7590-7603.	3.1	18
47	Robust Control Pulses Design for Electron Shuttling in Solid-State Devices. <i>IEEE Transactions on Control Systems Technology</i> , 2014, 22, 2354-2359.	5.2	17
48	Macroscopicity of quantum superpositions on a one-parameter unitary path in Hilbert space. <i>Physical Review A</i> , 2014, 90, .	2.5	8
49	Realistic and verifiable coherent control of excitonic states in a light-harvesting complex. <i>New Journal of Physics</i> , 2014, 16, 045007.	2.9	35
50	Collective effects in linear spectroscopy of dipole-coupled molecular arrays. <i>Physical Review A</i> , 2014, 90, .	2.5	3
51	Continuous Measurement of a Non-Markovian Open Quantum System. <i>Physical Review Letters</i> , 2014, 112, 113601.	7.8	27
52	Measurement- and comparison-based sizes of Schrödinger cat states of light. <i>Physical Review A</i> , 2014, 89, .	2.5	15
53	Generalized Master Equation with Non-Markovian Multichromophoric Förster Resonance Energy Transfer for Modular Exciton Densities. <i>Physical Review Letters</i> , 2014, 113, 188102.	7.8	43
54	Coherent and Diffusive Time Scales for Exciton Dissociation in Bulk Heterojunction Photovoltaic Cells. <i>Journal of Physical Chemistry C</i> , 2014, 118, 27235-27244.	3.1	23

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55	Robustness of high-fidelity Rydberg gates with single-site addressability. <i>Physical Review A</i> , 2014, 90, .	2.5	77
56	Observation of Measurement-Induced Entanglement and Quantum Trajectories of Remote Superconducting Qubits. <i>Physical Review Letters</i> , 2014, 112, 170501.	7.8	206
57	Ab Initio Calculation of Molecular Aggregation Effects: A Coumarin-343 Case Study. <i>Journal of Physical Chemistry A</i> , 2013, 117, 11072-11085.	2.5	15
58	Optimality of qubit purification protocols in the presence of imperfections. <i>Physical Review A</i> , 2013, 87, .	2.5	8
59	Optimal control for electron shuttling. <i>Physical Review B</i> , 2013, 87, .	3.2	3
60	Large-scale atomistic density functional theory calculations of phosphorus-doped silicon quantum bits. <i>Physical Review B</i> , 2013, 88, .	3.2	9
61	Overcoming dephasing noise with robust optimal control. <i>Physical Review A</i> , 2012, 86, .	2.5	26
62	Topology in superposition. <i>Nature Physics</i> , 2012, 8, 9-10.	16.7	3
63	Spatial propagation of excitonic coherence enables ratcheted energy transfer. <i>Physical Review E</i> , 2012, 86, 041911.	2.1	28
64	Effects of the Environment on Charge Transport in Molecular Wires. <i>Journal of Physical Chemistry C</i> , 2012, 116, 25213-25225.	3.1	17
65	Homogeneous Bose gas of dipolar molecules in the mean field approximation. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 18835.	2.8	3
66	A Ground State Monte Carlo Approach for Studies of Dipolar Systems with Rotational Degrees of Freedom. <i>Journal of Low Temperature Physics</i> , 2011, 165, 249-260.	1.4	9
67	Optimizing entangling quantum gates for physical systems. <i>Physical Review A</i> , 2011, 84, .	2.5	54
68	Environmental correlation effects on excitation energy transfer in photosynthetic light harvesting. <i>Physical Review E</i> , 2011, 83, 011906.	2.1	65
69	Limits of quantum speedup in photosynthetic light harvesting. <i>New Journal of Physics</i> , 2010, 12, 065041.	2.9	136
70	Microscopic model of critical current noise in Josephson-junction qubits: Subgap resonances and Andreev bound states. <i>Physical Review B</i> , 2009, 80, .	3.2	23
71	Optimal quantum multiparameter estimation and application to dipole- and exchange-coupled qubits. <i>Physical Review A</i> , 2009, 79, .	2.5	28
72	Thermal canting of spin-bond order. <i>Physical Review B</i> , 2009, 79, .	3.2	7

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73	Electronic structure of superposition states in flux qubits. Physica Scripta, 2009, T137, 014022.	2.5	16
74	Suppression of $\langle \sigma_x \rangle$ in one-qubit systems. Physical Review A, 2008, 77, .	2.5	16
75	Criteria for dynamically stable decoherence-free subspaces and incoherently generated coherences. Physical Review A, 2008, 77, .	2.5	45
76	Quantum nondemolition measurements of single donor spins in semiconductors. Physical Review B, 2008, 78, .	3.2	30
77	Measurement-based measure of the size of macroscopic quantum superpositions. Physical Review A, 2007, 75, .	2.5	80
78	Electrical activation and electron spin coherence of ultralow dose antimony implants in silicon. Applied Physics Letters, 2006, 88, 112101.	3.3	69
79	High-fidelity one-qubit operations under random telegraph noise. Physical Review A, 2006, 73, .	2.5	73
80	Local superfluidity in inhomogeneous quantum fluids. Physical Review B, 2006, 74, .	3.2	50
81	Optimal generation of single-qubit operation from an always-on interaction by algebraic decoupling. Physical Review A, 2006, 73, .	2.5	3
82	Probing phonon-rotation coupling in helium nanodroplets: Infrared spectroscopy of CO and its isotopomers. Physical Review B, 2006, 73, .	3.2	72
83	Local Superfluidity in 4He and para-H ₂ Clusters. Journal of Low Temperature Physics, 2005, 138, 253-258.	1.4	7
84	Generation of quantum logic operations from physical Hamiltonians. Physical Review A, 2005, 71, .	2.5	26
85	Quantum error correction of a qubit loss in an addressable atomic system. Physical Review A, 2005, 72, .	2.5	28
86	Full protection of superconducting qubit systems from coupling errors. Physical Review B, 2005, 72, .	3.2	14
87	Reply to Comment on "Electronic Transport, Structure, and Energetics of Endohedral Gd@C ₈₂ Metallofullerenes" Nano Letters, 2005, 5, 2341-2341.	9.1	18
88	Effect of electron-nuclear spin interactions for electron-spin qubits localized in InGaAs self-assembled quantum dots. Journal of Applied Physics, 2005, 97, 043706.	2.5	25
89	Perfect pattern formation of neutral atoms in an addressable optical lattice. Physical Review A, 2005, 71, .	2.5	26
90	Optimal quantum circuit synthesis from controlled-unitary gates. Physical Review A, 2004, 69, .	2.5	38

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91	Another way to approach zero entropy for a finite system of atoms. <i>Physical Review A</i> , 2004, 70, .	2.5	56
92	Simple model for magnetization ratios in doped nanocrystals. <i>Journal of Applied Physics</i> , 2004, 95, 1436-1438.	2.5	1
93	Entangling flux qubits with a bipolar dynamic inductance. <i>Physical Review B</i> , 2004, 70, .	3.2	94
94	Structure and Energetics of Helium Adsorption on Nanosurfaces. <i>Journal of Low Temperature Physics</i> , 2004, 134, 263-268.	1.4	18
95	Nanoscale Quantum Solvation of para-H ₂ Around the Linear OCS Molecule Inside 4He Droplets. <i>Journal of Low Temperature Physics</i> , 2004, 134, 269-274.	1.4	11
96	Transmission spectrum of an optical cavity containing N atoms. <i>Physical Review A</i> , 2004, 69, .	2.5	16
97	Electronic Transport, Structure, and Energetics of Endohedral Gd@C ₈₂ Metallofullerenes. <i>Nano Letters</i> , 2004, 4, 2073-2078.	9.1	87
98	An Explicit Universal Gate-Set for Exchange-Only Quantum Computation. <i>Quantum Information Processing</i> , 2003, 2, 289-307.	2.2	22
99	Implementing a Quantum Algorithm with Exchange-Coupled Quantum Dots: A Feasibility Study. <i>Quantum Information Processing</i> , 2003, 2, 309-345.	2.2	3
100	Quantum random-walk search algorithm. <i>Physical Review A</i> , 2003, 67, .	2.5	842
101	Geometric theory of nonlocal two-qubit operations. <i>Physical Review A</i> , 2003, 67, .	2.5	292
102	Effects of molecular rotation on densities in doped 4He clusters. <i>Journal of Chemical Physics</i> , 2003, 118, 5011-5027.	3.0	35
103	Microscopic two-fluid theory of rotational constants of the OCS-H ₂ complex in 4He droplets. <i>Journal of Chemical Physics</i> , 2003, 119, 1986-1995.	3.0	15
104	Deterministic optical Fock-state generation. <i>Physical Review A</i> , 2003, 67, .	2.5	47
105	OCS in small para-hydrogen clusters: Energetics and structure with N=10 ⁸ complexed hydrogen molecules. <i>Journal of Chemical Physics</i> , 2003, 119, 11682-11694.	3.0	49
106	STRUCTURE AND SPECTROSCOPY OF DOPED HELIUM CLUSTERS USING QUANTUM MONTE CARLO TECHNIQUES. <i>International Journal of Modern Physics B</i> , 2003, 17, 5267-5277.	2.0	4
107	Exact gate sequences for universal quantum computation using the XY interaction alone. <i>Physical Review A</i> , 2002, 65, .	2.5	40
108	Density dependence of the hydrodynamic response to SF ₆ rotation in superfluid helium. <i>Journal of Chemical Physics</i> , 2002, 117, 11244-11264.	3.0	10

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109	EFFICIENT IMPLEMENTATION OF THE PROJECTION OPERATOR IMAGINARY TIME SPECTRAL EVOLUTION (POITSE) METHOD FOR EXCITED STATES. <i>Recent Advances in Computational</i> , 2002, , 111-126.	0.8	8
110	THE FINITE-TEMPERATURE PATH INTEGRAL MONTE CARLO METHOD AND ITS APPLICATION TO SUPERFLUID HELIUM CLUSTERS. <i>Series on Advances in Quantum Many-body Theory</i> , 2002, , 91-128.	0.2	6
111	STRUCTURE AND SPECTROSCOPY OF DOPED HELIUM CLUSTERS USING QUANTUM MONTE CARLO TECHNIQUES. , 2002, , .		0
112	Theory of decoherence-free fault-tolerant universal quantum computation. <i>Physical Review A</i> , 2001, 63, .	2.5	420
113	Decoherence-free subspaces for multiple-qubit errors. I. Characterization. <i>Physical Review A</i> , 2001, 63, .	2.5	74
114	Localization of helium at an aromatic molecule in superfluid helium clusters. <i>Journal of Chemical Physics</i> , 2001, 114, 3163-3169.	3.0	55
115	Decoherence-free subspaces for multiple-qubit errors. II. Universal, fault-tolerant quantum computation. <i>Physical Review A</i> , 2001, 63, .	2.5	51
116	Coherence-Preserving Quantum Bits. <i>Physical Review Letters</i> , 2001, 87, 247902.	7.8	58
117	Quantum solvation and molecular rotations in superfluid helium clusters. <i>Journal of Chemical Physics</i> , 2000, 113, 6469-6501.	3.0	233
118	Tunneling splittings in water trimer by projector Monte Carlo. <i>Journal of Chemical Physics</i> , 2000, 112, 2218-2226.	3.0	15
119	Protecting quantum information encoded in decoherence-free states against exchange errors. <i>Physical Review A</i> , 2000, 61, .	2.5	50
120	Universal Fault-Tolerant Quantum Computation on Decoherence-Free Subspaces. <i>Physical Review Letters</i> , 2000, 85, 1758-1761.	7.8	278
121	Robustness of decoherence-free subspaces for quantum computation. <i>Physical Review A</i> , 1999, 60, 1944-1955.	2.5	117
122	Excited states of van der Waals clusters by projector Monte Carlo, with application to excitations of molecules in small 4He _n . <i>Journal of Chemical Physics</i> , 1999, 110, 5789-5805.	3.0	38
123	Concatenating Decoherence-Free Subspaces with Quantum Error Correcting Codes. <i>Physical Review Letters</i> , 1999, 82, 4556-4559.	7.8	248
124	Surface relaxation in CdSe nanocrystals. <i>Journal of Chemical Physics</i> , 1999, 110, 11012-11022.	3.0	90
125	Decoherence-Free Subspaces for Quantum Computation. <i>Physical Review Letters</i> , 1998, 81, 2594-2597.	7.8	1,465
126	Rotational ordering in solid deuterium and hydrogen: A path integral Monte Carlo study. <i>Physical Review B</i> , 1997, 55, 12253-12266.	3.2	50

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127	Theoretical calculations of zero-temperature absorption spectra of Li in solid H ₂ . Journal of Chemical Physics, 1996, 104, 3155-3175.	3.0	52
128	Path integral Monte Carlo study of SF ₆ -doped helium clusters. Journal of Chemical Physics, 1996, 104, 2341-2348.	3.0	89
129	A theoretical study of light emission from nanoscale silicon. Journal of Electronic Materials, 1996, 25, 1132-1132.	2.2	1
130	A theoretical study of light emission from nanoscale silicon. Journal of Electronic Materials, 1996, 25, 269-285.	2.2	68
131	Current and condensate distributions in rotational excited states of quantum liquid clusters. Journal of Chemical Physics, 1996, 104, 2669-2683.	3.0	22
132	Dopant location in SF ₆ He _{39,40} . Journal of Chemical Physics, 1996, 104, 5080-5093.	3.0	32
133	Quantum Monte Carlo studies of anisotropy and rotational states in HeNCl ₂ . Journal of Chemical Physics, 1995, 103, 2561-2571.	3.0	24
134	Theoretical analysis of the geometries of the luminescent regions in porous silicon. Applied Physics Letters, 1995, 67, 1125-1127.	3.3	9
135	A theoretical study of the influence of the surface on the electronic structure of CdSe nanoclusters. Journal of Chemical Physics, 1994, 100, 2831-2837.	3.0	113
136	Structure and dynamics of quantum clusters. International Reviews in Physical Chemistry, 1994, 13, 41-84.	2.3	161
137	Calculation of the Electronic Structure of Silicon Nanocrystals. Materials Research Society Symposia Proceedings, 1994, 358, 25.	0.1	4
138	Electronic structure of semiconductor nanoclusters: A time dependent theoretical approach. Journal of Chemical Physics, 1993, 99, 3707-3715.	3.0	58
139	Rotational excitations of quantum liquid clusters: He ₇ and (H ₂) ₇ . Journal of Chemical Physics, 1993, 99, 8816-8829.	3.0	35
140	Molecules in helium clusters: SF ₆ He _N . Journal of Chemical Physics, 1993, 99, 9730-9744.	3.0	96
141	Many-particle quantum dynamics: An exact algorithm for correlated motion on lattices. Journal of Chemical Physics, 1992, 96, 5318-5333.	3.0	2
142	Monte Carlo studies of grain boundary segregation and ordering. Journal of Chemical Physics, 1992, 97, 3674-3687.	3.0	2
143	Monte Carlo study of impurities in quantum clusters: H ₂ in He _N , N=2-19. Journal of Chemical Physics, 1992, 96, 2953-2965.	3.0	58
144	Multiple-band theory of dynamics for interacting adsorbates coupled to phonons. II. Single adsorbate dynamics. Journal of Chemical Physics, 1992, 97, 6975-6990.	3.0	13

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145	Multiple-band theory of dynamics for interacting adsorbates coupled to phonons. I. Variationally optimized Hamiltonian. Journal of Chemical Physics, 1991, 95, 8599-8615.	3.0	17
146	A mean-field theory of grain boundary segregation. Journal of Chemical Physics, 1991, 95, 4427-4438.	3.0	2
147	Quantum relaxation in high density fermion and boson tunneling dynamics: Implications for low temperature anomalous surface diffusion. Journal of Chemical Physics, 1991, 95, 1417-1420.	3.0	5
148	Quantum scattering from disordered surfaces. Journal of Chemical Physics, 1991, 95, 6136-6150.	3.0	8
149	Microscopic studies of collective spectra of quantum liquid clusters. Journal of Chemical Physics, 1990, 93, 746-759.	3.0	68
150	Wave functions of helium clusters. Journal of Chemical Physics, 1990, 93, 6738-6751.	3.0	87
151	Mean-field theories for multidimensional diffusion. Journal of Chemical Physics, 1989, 90, 2758-2767.	3.0	5
152	A Logarithmic Bayesian Approach to Quantum Error Detection. Quantum - the Open Journal for Quantum Science, 0, 6, 680.	0.0	2