

R D Mcdonald

List of Publications by Year in descending order

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92
papers

4,077
citations

94433

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92
all docs

92
docs citations

92
times ranked

4661
citing authors

#	ARTICLE	IF	CITATIONS
1	Dirac fermions and flat bands in the ideal kagome metal FeSn. <i>Nature Materials</i> , 2020, 19, 163-169.	27.5	367
2	Realization of a three-dimensional spin ^{1/2} anisotropic harmonic honeycomb iridate. <i>Nature Communications</i> , 2014, 5, 4203.	12.8	230
3	Fermi Surface of Superconducting LaFePO Determined from Quantum Oscillations. <i>Physical Review Letters</i> , 2008, 101, 216402.	7.8	182
4	Bounding the pseudogap with a line of phase transitions in YBa ₂ Cu ₃ O _{6+δ} . <i>Nature</i> , 2013, 498, 75-77.	27.8	159
5	Quasiparticle mass enhancement approaching optimal doping in a high- <i>T_c</i> superconductor. <i>Science</i> , 2015, 348, 317-320.	12.6	159
6	Sliding charge-density wave in manganites. <i>Nature Materials</i> , 2008, 7, 25-30.	27.5	119
7	Experimentally determining the exchange parameters of quasi-two-dimensional Heisenberg magnets. <i>New Journal of Physics</i> , 2008, 10, 083025.	2.9	106
8	Transport near a quantum critical point in BaFe ₂ (As _{1-x} P _x) ₂ . <i>Nature Physics</i> , 2014, 10, 194-197.	16.7	100
9	Scale-invariant magnetoresistance in a cuprate superconductor. <i>Science</i> , 2018, 361, 479-481.	12.6	100
10	Magneto-resistance up to 60 Tesla in topological insulator Bi ₂ Te ₃ thin films. <i>Applied Physics Letters</i> , 2012, 101, .	3.3	94
11	Quantum oscillations in the parent pnictide $BaFe_2(As_{1-x}P_x)_2$ itinerant electrons in the reconstructed state. <i>Physical Review B</i> , 2009, 80, .	3.2	93
12	Scaling between magnetic field and temperature in the high-temperature superconductor BaFe ₂ (As _{1-x} P _x) ₂ . <i>Nature Physics</i> , 2016, 12, 916-919.	16.7	92
13	Electronic in-plane symmetry breaking at field-tuned quantum criticality in CeRhIn ₅ . <i>Nature</i> , 2017, 548, 313-317.	27.8	89
14	Strong H ₂ Hydrogen Bonds as Synthons in Polymeric Quantum Magnets: Structural, Magnetic, and Theoretical Characterization of [Cu(HF ₂)(pyrazine) ₂]SbF ₆ , [Cu ₂ F(HF)(HF ₂)(pyrazine) ₄](SbF ₆) ₂ , and [CuAg(H ₃ F ₄)(pyrazine) ₅](SbF ₆) ₂ . <i>Journal of the American Chemical Society</i> , 2009, 131, 6733-6747.	13.7	76
15	Anomalous electronic structure and magnetoresistance in TaAs ₂ . <i>Scientific Reports</i> , 2016, 6, 27294.	3.3	74
16	Field-Induced Bose-Einstein Condensation of Triplons up to 8 K in Cr_2O_3 . <i>Physical Review Letters</i> , 2009, 103, 207203.	7.8	73
17	Quantum limit transport and destruction of the Weyl nodes in TaAs. <i>Nature Communications</i> , 2018, 9, 2217.	12.8	71
18	Fermi Surface of $SrFe_2P_2$ Determined by the deHaas-vanAlphen Effect. <i>Physical Review Letters</i> , 2009, 103, 076401.	7.8	70

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19	Quantum Oscillations in $YBa_2Cu_3O_{6.61}$ and Cu . Physical Review Letters, 2010, 104, 086403.	7.8	68
20	Electron-hole compensation effect between topologically trivial electrons and nontrivial holes in NbAs. Physical Review B, 2015, 92, .	3.2	66
21	Cuprate Fermi Orbits and Fermi Arcs: The Effect of Short-Range Antiferromagnetic Order. Physical Review Letters, 2007, 99, 206406.	7.8	61
22	Experimental and Theoretical Characterization of the Magnetic Properties of $CuF_2(H_2O)_2(py_2)$ (py_2 = pyrazine): A Two-Dimensional Quantum Magnet Arising from Supersuperexchange Interactions through Hydrogen Bonded Paths. Chemistry of Materials, 2008, 20, 7408-7416.	6.7	59
23	Angle-dependent magnetoresistance of the layered organic superconductor $(ET)_2Cu(NCS)_2$: Simulation and experiment. Physical Review Letters, 2004, 93, 177201.	7.8	59
24	Enhanced Fermi Surface Nesting in Superconducting $BaFe_2As_2$. Physical Review B, 2004, 69, .	3.2	58
25	Anisotropy reversal of the upper critical field at low temperatures and spin-locked superconductivity in $BaFe_2As_2$. Physical Review B, 2015, 91, .	3.2	55
26	Exchange biased anomalous Hall effect driven by frustration in a magnetic kagome lattice. Nature Communications, 2020, 11, 560.	12.8	54
27	Nonmonotonic field dependence of the Néel temperature in the quasi-two-dimensional magnet Cu_2O . Physical Review B, 2009, 79, .	3.2	52
28	Controllable chirality-induced geometrical Hall effect in a frustrated highly correlated metal. Nature Communications, 2012, 3, 1067.	12.8	51
29	Localized 5f electrons in superconducting $PuCoGa_5$: consequences for superconductivity in $PuCoGa_5$. Journal of Physics Condensed Matter, 2012, 24, 052206.	1.8	51
30	de Haas-van Alphen effect of correlated Dirac states in kagome metal Fe_3Sn_2 . Nature Communications, 2019, 10, 4870.	12.8	48
31	Local magnetism and spin correlations in the geometrically frustrated cluster magnet $LiZn_2V_2O_7$. Physical Review B, 2014, 89, .	3.2	46
32	Single reconstructed Fermi surface pocket in an underdoped single-layer cuprate superconductor. Nature Communications, 2016, 7, 12244.	12.8	46
33	Dimensionality Selection in a Molecule-Based Magnet. Physical Review Letters, 2012, 108, 077208.	7.8	45
34	Defect-driven ferrimagnetism and hidden magnetization in $MnBi_2Te_4$. Physical Review B, 2021, 103, .	3.2	43
35	Avoided valence transition in a plutonium superconductor. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 3285-3289.	7.1	39

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37	Importance of Halogen-Halogen Contacts for the Structural and Magnetic Properties of $\text{CuX}_2(\text{pyrazine-N}_2)(\text{H}_2\text{O})_2$ ($X = \text{Cl}$ and Br). <i>Physical Review Letters</i> , 2011, 102, 157401.	4.0	38
38	Asymmetric Quintuplet Condensation in the Frustrated $\text{S}_3\text{BaMn}_3\text{O}_8$ Spin Dimer Compound. <i>Physical Review Letters</i> , 2011, 106, 107401.	7.8	37
39	Spatial control of heavy-fermion superconductivity in CeIrIn_5 . <i>Science</i> , 2019, 366, 221-226.	12.6	37
40	Role of anisotropy in the spin-dimer compound $\text{BaCuSi}_2\text{O}_6$. <i>Physical Review B</i> , 2006, 74, .	3.2	34
41	Spin-valley locking and bulk quantum Hall effect in a noncentrosymmetric Dirac semimetal BaMnSb_2 . <i>Nature Communications</i> , 2021, 12, 4062.	12.8	32
42	Uncommonly high upper critical field of the pyrochlore superconductor KOs_2O_6 below the enhanced paramagnetic limit. <i>Physical Review B</i> , 2006, 74, .	3.2	31
43	Structural, Electronic, and Magnetic Properties of Quasi-1D Quantum Magnets $[\text{Ni}(\text{HF}_2)(\text{pyz})_2\text{X}]_n$ ($\text{pyz} = \text{pyrazine}$; $X = \text{PF}_6$ or BF_4). <i>Chemistry</i> , 2011, 50, 5990-6009.	4.0	30
44	Resonant torsion magnetometry in anisotropic quantum materials. <i>Nature Communications</i> , 2018, 9, 3975.	12.8	30
45	Field-induced Ising ground states in a quasi-two-dimensional antiferromagnet. <i>Physical Review B</i> , 2011, 84, .	3.2	28
46	Charge-Density Waves Survive the Pauli Paramagnetic Limit. <i>Physical Review Letters</i> , 2004, 93, 076405.	7.8	27
47	Characterization of the Antiferromagnetism in $\text{Ag}(\text{pyz})_2(\text{S}_2\text{O}_8)$ ($\text{pyz} = \text{Pyrazine}$) with a Two-Dimensional Square Lattice of Ag^{2+} Ions. <i>Journal of the American Chemical Society</i> , 2009, 131, 4590-4591.	13.7	27
48	Fermi surface of CePt_2In_7 : A two-dimensional analog of CeIn_3 . <i>Physical Review B</i> , 2011, 83, .	3.2	25
49	Scale-invariant magnetic anisotropy in RuCl_3 at high magnetic fields. <i>Nature Physics</i> , 2021, 17, 240-244.	16.7	25
50	Catastrophic Fermi Surface Reconstruction in the Shape-Memory Alloy AuZn . <i>Physical Review Letters</i> , 2005, 94, 116401.	7.8	22
51	Persistence to High Temperatures of Interlayer Coherence in an Organic Superconductor. <i>Physical Review Letters</i> , 2007, 99, 027004.	7.8	22
52	Isotope effect in quasi-two-dimensional metal-organic antiferromagnets. <i>Physical Review B</i> , 2008, 78, .	3.2	21
53	Evidence for a delocalization quantum phase transition without symmetry breaking in CeCoIn_5 . <i>Science</i> , 2022, 375, 76-81.	12.6	21
54	Magnetic field tuning of an excitonic insulator between the weak and strong coupling regimes in quantum limit graphite. <i>Scientific Reports</i> , 2017, 7, 1733.	3.3	20

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55	Cascade of field-induced magnetic transitions in a frustrated antiferromagnetic metal. Physical Review B, 2014, 90, .	3.2	19
56	Angle-dependent magnetoresistance oscillations due to magnetic breakdown orbits. Physical Review B, 2007, 76, .	3.2	18
57	Suppression of the antiferromagnetic ordering at high magnetic fields in SmFeAsO and SmFeAsO _{1-x} F _x . Physical Review B, 2012, 86, 040401.	3.2	18
58	Control of the third dimension in copper-based square-lattice antiferromagnets. Physical Review B, 2016, 93, .	3.2	18
59	Magneto-optical properties and charge-spin coupling in the molecular(2,3-dmpyH)2CuBr4 spin-ladder material. Physical Review B, 2010, 81, .	3.2	17
60	[Cu(HF ₂) ₂ (pyrazine)] ₂ : A Rectangular Antiferromagnetic Lattice with a Spin Exchange Path Made Up of Two Different FHF ⁺ Bridges. Angewandte Chemie - International Edition, 2011, 50, 1573-1576.	13.8	17
61	Quantum oscillations in antiferromagnetic CaFe ₂ As ₂ on the brink of superconductivity. Journal of Physics Condensed Matter, 2009, 21, 322202.	1.8	16
62	Shubnikov-de Haas quantum oscillations reveal a reconstructed Fermi surface near optimal doping in a thin film of the cuprate superconductor Pr1.86Ce0.14CuO4±f. Physical Review B, 2016, 94, .	3.2	16
63	Fermi surface as a driver for the shape-memory effect in AuZn. Journal of Physics Condensed Matter, 2005, 17, L69-L75.	1.8	15
64	Pressure dependence of the BaFe2As2 Fermi surface within the spin density wave state. Physical Review B, 2012, 85, .	3.2	15
65	Unusual Magneto-Optical Phenomenon Reveals Low Energy Spin Dispersion in the Spin-1 Anisotropic Heisenberg Antiferromagnetic Chain System NiCl2·4SC(NH2)2. Physical Review Letters, 2008, 101, 087602.	7.8	14
66	Emergent magnetic anisotropy in the cubic heavy-fermion metal CeIn3. Npj Quantum Materials, 2017, 2, .	5.2	14
67	Quantum oscillations from the reconstructed Fermi surface in electron-doped cuprate superconductors. New Journal of Physics, 2018, 20, 043019.	2.9	14
68	Superconductivity and quantum criticality linked by the Hall effect in a strange metal. Nature Physics, 2021, 17, 58-62.	16.7	13
69	Landau Quantization Effects in the Charge-Density-Wave System (Per)2M(mnt)2 (where M=Au and Pt). Physical Review Letters, 2005, 94, 106404.	7.8	12
70	Crystal Structure and Antiferromagnetic Ordering of Quasi-2D [Cu(HF2)(pyz)2]TaF6 (pyz=pyrazine). Journal of Low Temperature Physics, 2010, 159, 15-19.	1.4	12
71	Quantum oscillations of the superconductor LaRu2P2: Comparable mass enhancement in Ru and Fe phosphides. Physical Review B, 2011, 84, .	3.2	11
72	Upper critical field of isoelectron substituted SrFe _{1-x} Co _x P ₂ . Physical Review B, 2011, 84, .		

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73	Double exchange in a mixed-valent octanuclear iron cluster, $[\text{Fe}_{8}(\mu_{4}^{2}\text{-O})_{4}(\mu_{4}^{2}\text{-Cl-pz})_{12}\text{Cl}_{4}]^{3+}$. Dalton Transactions, 2014, 43, 11269-11276.	3.3	11
74	Observation of cyclotron resonance and measurement of the hole mass in optimally doped $\text{La}_{1-x}\text{F}_{x}$. Physical Review B, 2021, 103, .	16.7	7
75	Magnetic breakdown and charge density wave formation: A quantum oscillation study of the rare-earth tritellurides. Physical Review B, 2020, 102, .	3.2	8
76	Hard antinodal gap revealed by quantum oscillations in the pseudogap regime of underdoped high- T_c superconductors. Nature Physics, 2020, 16, 841-847.	16.7	7
77	Doping dependent nonlinear Hall effect in $\text{SmFeAsO}_{1-x}\text{F}_x$. Journal of Physics Condensed Matter, 2009, 21, 412201.	1.8	6
78	Bimetallic MOFs $\text{H}_3\text{O}[\text{Cu}(\text{MF}_6)(\text{pyrazine})_2]_4 \cdot 4\text{H}_2\text{O}$ with disordered quantum spins in the V^{4+} system. Chemical Communications, 2016, 52, 12653-12656.	4.1	6
79	Comment on "Pinning Frequencies of the Collective Modes in Uranium". Physical Review Letters, 2007, 98, 249701; discussion 249702.	7.8	5
80	High magnetic field studies of the shape memory alloy AuZn. Journal of Physics and Chemistry of Solids, 2006, 67, 2100-2105.	4.0	4
81	A photonic band-gap resonator to facilitate GHz-frequency conductivity experiments in pulsed magnetic fields. Review of Scientific Instruments, 2006, 77, 084702.	1.3	4
82	Determining the in-plane Fermi surface topology in high- T_c superconductors using angle-dependent magnetic quantum oscillations. Journal of Physics Condensed Matter, 2009, 21, 192201.	1.8	4
83	Exact mapping of the $d_{x^2-y^2}$ Cooper-pair wavefunction onto the spin fluctuations in cuprates: the Fermi surface as a driver for high- T_c superconductivity. Journal of Physics Condensed Matter, 2009, 21, 012201.	1.8	4
84	Thermodynamic constraints on the amplitude of quantum oscillations. Physical Review B, 2017, 95, .	3.2	4
85	Complex conductivity of UTX compounds in high magnetic fields. Journal of Applied Physics, 2009, 105, 07E108.	2.5	3
86	Recent high-magnetic-field experiments on the high- T_c cuprates; Fermi-surface instabilities as a driver for superconductivity. Physica B: Condensed Matter, 2009, 404, 350-353.	2.7	3
87	Interlayer magnetotransport in the overdoped cuprate $\text{Tl}_2\text{Ba}_2\text{CuO}_{6+x}$: Quantum critical point and its downslide in an applied magnetic field. Physical Review B, 2010, 82, .	3.2	3
88	Shubnikov-de Haas oscillation in PuIn_3 . Journal of the Korean Physical Society, 2013, 63, 380-382.	0.7	3
89	Sliding charge-density waves in manganites. Nature Materials, 2010, 9, 689-689.	27.5	2
90	GaN/AlGaN 2DEGs in the quantum regime: Magneto-transport and photoluminescence to 60 tesla. Applied Physics Letters, 2020, 117, 262105.	3.3	1

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91	High-field studies of the slow thermal death of interlayer coherence in quasi-two-dimensional metals. Journal of Physics: Conference Series, 2006, 51, 319-322.	0.4	0
92	Thermoelectric studies of the non-thermal equilibrium dynamics in chiral metals. Physica B: Condensed Matter, 2008, 403, 1652-1654.	2.7	0