

Fedor Balakirev

List of Publications by Year in descending order

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117
papers

6,121
citations

101543

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121
all docs

121
docs citations

121
times ranked

5125
citing authors

#	ARTICLE	IF	CITATIONS
1	Superconductivity at 250 K in lanthanum hydride under high pressures. Nature, 2019, 569, 528-531.	27.8	960
2	Nearly isotropic superconductivity in (Ba,K)Fe ₂ As ₂ . Nature, 2009, 457, 565-568.	27.8	479
3	Upper critical fields and thermally-activated transport of NdFeAsO crystal. Physical Review B, 2008, 78, .	3.2	303
4	Quantum Oscillations in the Underdoped Cuprate YBa ₂ Cu ₃ O _{7-x} . Physical Review Letters, 2008, 100, 047003.	3.2	243
5	Metal-to-Insulator Crossover in the Low-Temperature Normal State of Bi ₂ Sr _{2-x} La _x CuO _{6+δ} . Physical Review Letters, 2000, 85, 638-641.	7.8	214
6	Superconductivity up to 243 K in the yttrium-hydrogen system under high pressure. Nature Communications, 2021, 12, 5075.	12.8	202
7	Bounding the pseudogap with a line of phase transitions in YBa ₂ Cu ₃ O _{6+δ} . Nature, 2013, 498, 75-77.	27.8	159
8	Extreme magnetic field-boosted superconductivity. Nature Physics, 2019, 15, 1250-1254.	16.7	138
9	Weak anisotropy of the superconducting upper critical field in Fe crystals. Physical Review B, 2010, 81, .	3.2	135
10	Significant enhancement of upper critical fields by doping and strain in iron-based superconductors. Physical Review B, 2011, 84, .	3.2	135
11	A magnetic topological semimetal Sr _{1-y} Mn _{1-z} Sb ₂ (y, z < 0.1). Nature Materials, 2017, 16, 905-910.	27.5	135
12	High magnetic-field scales and critical currents in SmFeAs(O,F) crystals. Nature Materials, 2010, 9, 628-633.	27.5	125
13	Signature of optimal doping in Hall-effect measurements on a high-temperature superconductor. Nature, 2003, 424, 912-915.	27.8	121
14	Comparative high-field magnetotransport of the oxypnictide superconductors RFeAsO _{1-x} F _x (R=La, Nd) and SmFeAsO _{1-x} F _x . Physical Review B, 2008, 78, .	3.2	121
15	Anisotropy of the Upper Critical Field in a Co-Doped BaFe ₂ As ₂ Single Crystal. Journal of the Physical Society of Japan, 2009, 78, 084719.	1.6	117
16	Heat capacity through the magnetic-field-induced resistive transition in an underdoped high-temperature superconductor. Nature Physics, 2011, 7, 332-335.	16.7	116
17	Anisotropic thermodynamic and transport properties of single-crystalline CaKFe ₄ As ₁₆ . Physical Review B, 2016, 94, .	3.2	116
18	Pseudoisotropic Upper Critical Field in Cobalt-Doped SrFe ₂ As ₂ Films. Physical Review Letters, 2009, 102, 117004.	7.8	104

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19	Scale-invariant magnetoresistance in a cuprate superconductor. <i>Science</i> , 2018, 361, 479-481.	12.6	100
20	Electronic in-plane symmetry breaking at field-tuned quantum criticality in CeRhIn5. <i>Nature</i> , 2017, 548, 313-317.	27.8	89
21	Normal-state nodal electronic structure in underdoped high-Tc copper oxides. <i>Nature</i> , 2014, 511, 61-64.	27.8	85
22	Correlated enhancement of H_{c2} and J_{c1} in carbon nanotube doped MgB2. <i>Superconductor Science and Technology</i> , 2007, 20, L12-L15.	3.5	74
23	Quantum limit transport and destruction of the Weyl nodes in TaAs. <i>Nature Communications</i> , 2018, 9, 2217.	12.8	71
24	Giant positive magnetoresistance of Bi nanowire arrays in high magnetic fields. <i>Journal of Applied Physics</i> , 1999, 85, 6184-6186.	2.5	67
25	Disorder, metal-insulator crossover and phase diagram in high-T c cuprates. <i>Europhysics Letters</i> , 2008, 81, 37008.	2.0	67
26	Quantum Phase Transition in the Magnetic-Field-Induced Normal State of Optimum-Doped High- T_c Cuprate Superconductors at Low Temperatures. <i>Physical Review Letters</i> , 2009, 102, 017004.	7.8	64
27	Superconducting phase diagram of H3S under high magnetic fields. <i>Nature Communications</i> , 2019, 10, 2522.	12.8	62
28	Upper critical field and its anisotropy in LiFeAs. <i>Physical Review B</i> , 2011, 83, .	3.2	58
29	SiC and carbon nanotube distinctive effects on the superconducting properties of bulk MgB2. <i>Journal of Applied Physics</i> , 2008, 103, 023907.	2.5	56
30	Anisotropy reversal of the upper critical field at low temperatures and spin-locked superconductivity in K_2 X Y_2 Z_4 . <i>Physical Review B</i> , 2015, 91, .	3.2	55
31	High-Field Hall Resistivity and Magnetoresistance of Electron-Doped Pr_2 X Y_2 Z_4 . <i>Physical Review Letters</i> , 2007, 99, 047003.	7.8	53
32	Electrodynamics of high-temperature superconductors investigated with coherent terahertz pulse spectroscopy. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1996, 13, 1979.	2.1	50
33	Resonant ultrasound spectroscopy: The essential toolbox. <i>Review of Scientific Instruments</i> , 2019, 90, 121401.	1.3	50
34	Quantum Phase Transitions in the Cuprate Superconductor Bi_2 Sr_2 X Y_2 Z_4 . <i>Physical Review Letters</i> , 2004, 92, 247004.	7.8	46
35	High-temperature superconductivity on the verge of a structural instability in lanthanum superhydride. <i>Nature Communications</i> , 2021, 12, 6863.	12.8	40
36	Normal-state Hall effect and the insulating resistivity of high-Tc cuprates at low temperatures. <i>Physical Review B</i> , 1997, 56, R8530-R8534.	3.2	39

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37	Field-induced density wave in the heavy-fermion compound CeRhIn5. Nature Communications, 2015, 6, 6663.	12.8	36
38	High-field study of normal-state magnetotransport in Tl2Ba2CuO6+ δ . Physical Review B, 1998, 57, R728-R731.	3.2	33
39	Upward shift of the vortex solid phase in high-temperature-superconducting wires through high density nanoparticle addition. Scientific Reports, 2016, 6, 20436.	3.3	32
40	Spin-valley locking and bulk quantum Hall effect in a noncentrosymmetric Dirac semimetal BaMnSb2. Nature Communications, 2021, 12, 4062.	12.8	32
41	High-Temperature Superconductivity in Hydrides: Experimental Evidence and Details. Journal of Superconductivity and Novel Magnetism, 2022, 35, 965-977.	1.8	32
42	Magnetic field screening in hydrogen-rich high-temperature superconductors. Nature Communications, 2022, 13, .	12.8	32
43	Magnetically induced electric polarization in an organometallic magnet. Physical Review B, 2010, 82, .	3.2	30
44	Upper critical field and thermally activated flux flow in single-crystalline Tl Bi_2Se_3 . Physical Review B, 2010, 82, .	3.2	30
45	Doping dependence of the upper critical field and Hall resistivity of $\text{LaFeAsO}_{1-x}\text{F}_x$ ($x=0, 0.025, 0.05, 0.07$). Physical Review B, 2004, 69, .	8.2	28
46	Coherent pulse interrogation system for fiber Bragg grating sensing of strain and pressure in dynamic extremes of materials. Optics Express, 2015, 23, 14219.	3.4	28
47	Quantum oscillations in the type-II Dirac semi-metal candidate PtSe_2 . New Journal of Physics, 2018, 20, 043008.	2.9	28
48	Weak ferromagnetism in CaB_6 . Physical Review B, 2004, 69, .	3.2	27
49	Fermi surface of CePt_2In_7 : A two-dimensional analog of CeIn_3 . Physical Review B, 2011, 83, .	3.2	25
50	Quantum Oscillations in a Two-Dimensional Electron Gas at the Rocksalt/Zincblende Interface of PbTe/CdTe (111) Heterostructures. Nano Letters, 2015, 15, 4381-4386.	9.1	25
51	Magnetic field-induced ferroelectricity in Sb_2Te_3 Kagome staircase compound $\text{PbCu}_3\text{TeO}_7$. Npj Quantum Materials, 2018, 3, .	5.2	25
52	Scale-invariant magnetic anisotropy in RuCl_3 at high magnetic fields. Nature Physics, 2021, 17, 240-244.	16.7	25
53	Fiber Bragg Grating Dilatometry in Extreme Magnetic Field and Cryogenic Conditions. Sensors, 2017, 17, 2572.	3.8	24
54	Unusual high-field metal in a Kondo insulator. Nature Physics, 2021, 17, 788-793.	16.7	24

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55	Micromechanical "Trampoline" Magnetometers for Use in Large Pulsed Magnetic Fields. <i>Science</i> , 1998, 280, 720-722.	12.6	22
56	Spin reorientation and in-plane magnetoresistance of lightly doped $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ in magnetic fields up to 55 T. <i>Physical Review B</i> , 2004, 70, .	3.2	20
57	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
58	Smectic Vortex Phase in Optimally Doped $\text{YBa}_2\text{Cu}_3\text{O}_7$ Thin Films. <i>Physical Review Letters</i> , 2008, 100, 027004.	7.8	19
59	Extreme Magneto-transport of Bulk Carbon Nanotubes in Sorted Electronic Concentrations and Aligned High Performance Fiber. <i>Scientific Reports</i> , 2017, 7, 12193.	3.3	19
60	Enhanced Hybridization Sets the Stage for Electronic Nematicity in CeRhIn_5 . <i>Physical Review Letters</i> , 2019, 122, 016402.	7.8	19
61	Ordering at high magnetic fields in SmFeAsO and $\text{SmFeAsO}_{1-x}\text{F}_x$. <i>Physical Review B</i> , 2019, 100, 020407.	3.2	16
62	Hall coefficient and H_{c2} in underdoped $\text{LaFeAsO}_{0.95}\text{F}_{0.05}$. <i>Europhysics Letters</i> , 2008, 84, 37005.	2.0	17
63	Orbital magnetoresistance in the $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ system. <i>Physical Review B</i> , 1998, 57, R8083-R8086.	3.2	16
64	Magnetic-field-induced \log -T-insulating behavior in the resistivity of fluorine-doped $\text{SmFeAsO}_{1-x}\text{F}_x$. <i>Physical Review B</i> , 2009, 79, .	3.2	16
65	Anisotropic upper critical field of pristine and proton-irradiated single crystals of the magnetically ordered superconductor $\text{RbEuFe}_4\text{As}_4$. <i>Physical Review B</i> , 2019, 100, 020407.	3.2	15
66	Detection of Hole Pockets in the Candidate Type-II Weyl Semimetal MoTe_2 from Shubnikov-de Haas Quantum Oscillations. <i>Physical Review Letters</i> , 2020, 124, 076402.	7.8	15
67	Fragile three-dimensionality in the quasi-one-dimensional cuprate $\text{PrBa}_2\text{Cu}_4\text{O}_8$. <i>New Journal of Physics</i> , 2006, 8, 172-172.	2.9	14
68	Upper Critical Field and Kondo Effects in $\text{Fe}(\text{Te}_{0.9}\text{Se}_{0.1})$ Thin Films by Pulsed Field Measurements. <i>Scientific Reports</i> , 2016, 6, 21469.	3.3	14
69	Thermodynamic signature of a magnetic-field-driven phase transition within the superconducting state of an underdoped cuprate. <i>Nature Physics</i> , 2016, 12, 47-51.	16.7	14
70	Emergent magnetic anisotropy in the cubic heavy-fermion metal CeIn_3 . <i>Npj Quantum Materials</i> , 2017, 2, .	5.2	14
71	Nanoscale disorder in pure and doped MgB_2 thin films. <i>Superconductor Science and Technology</i> , 2010, 23, 095008.	3.5	13
72	Fragile charge order in the nonsuperconducting ground state of the underdoped high-temperature superconductors. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 9568-9572.	7.1	13

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73	Possible manifestations of the chiral anomaly and evidence for a magnetic field induced topological phase transition in the type-I Weyl semimetal TaAs. Physical Review B, 2019, 100, .	3.2	12
74	Quantum oscillations of the superconductor LaRu ₂ P ₂ : Comparable mass enhancement γ in Ru and Fe phosphides. Physical Review B, 2011, 84, .	3.2	11
75	Quantum oscillations of the superconductor LaRu ₂ P ₂ : Comparable mass enhancement γ in Ru and Fe phosphides. Physical Review B, 2011, 84, .	3.2	11
76	Examination of the c-axis resistivity of Bi ₂ Sr _{2-x} La _x CuO ₆ + δ in magnetic fields up to 58 T. Physical Review B, 2004, 70, .	3.2	10
77	Upper critical field of electron-doped Pr _{2-x} Ce _x CuO ₄ in parallel magnetic fields. Physical Review B, 2007, 75, .	3.2	10
78	Inversion of the upper critical field anisotropy in FeTeS films. Superconductor Science and Technology, 2014, 27, 044005.	3.5	10
79	Reduction of the low-temperature bulk gap in samarium hexaboride under high magnetic fields. Physical Review B, 2017, 95, .	3.2	10
80	Nonsaturating large magnetoresistance in the high carrier density nonsymmorphic metal CrP. Physical Review B, 2019, 99, .	3.2	10
81	Determining elastic anisotropy of textured polycrystals using resonant ultrasound spectroscopy. Journal of Materials Science, 2021, 56, 10053-10073.	3.7	10
82	Low-temperature normal state of Bi ₂ Sr _{2-x} La _x CuO ₆ + δ : comparison with La _{2-x} Sr _x CuO ₄ . Physica C: Superconductivity and Its Applications, 2001, 357-360, 138-141.	1.2	9
83	Nearly isotropic upper critical fields in a SrFe _{1.85} Co _{0.15} As ₂ single crystal. Physica C: Superconductivity and Its Applications, 2010, 470, S317-S319.	1.2	9
84	An FBG Optical Approach to Thermal Expansion Measurements under Hydrostatic Pressure. Sensors, 2017, 17, 2543.	3.8	9
85	Non-monotonic pressure dependence of high-field nematicity and magnetism in CeRhIn ₅ . Nature Communications, 2020, 11, 3482.	12.8	9
86	Raman scattering study of strain in Zn _x Cd _{1-x} Te/CdTe superlattices. Applied Physics Letters, 1992, 61, 417-419.	3.3	8
87	Phase stabilization by electronic entropy in plutonium. Nature Communications, 2019, 10, 3159.	12.8	8
88	The temperature dependence of SQUID noise at temperatures below 4 K. Physica C: Superconductivity and Its Applications, 2002, 368, 185-190.	1.2	7
89	Magneto-transport in LSCO high-T _c superconducting thin films. New Journal of Physics, 2006, 8, 194-194.	2.9	7
90	Upper critical field of the 122-type iron pnictide superconductors. Journal of Physics and Chemistry of Solids, 2011, 72, 423-425.	4.0	7

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91	Fermi-surface topologies and low-temperature phases of the filled skutterudite compounds CeOs_4 and NdOs_4 . Physical Review B, 2016, 94, .		
92	Dynamics and Critical Currents in Fast Superconducting Vortices at High pulsed Magnetic Fields. Physical Review Applied, 2019, 11, .	3.8	7
93	Ultrasonic instrumentation for measurements in high magnetic fields. II. Pulsed magnetic fields. Review of Scientific Instruments, 2006, 77, 035105.	1.3	6
94	Doping dependent nonlinear Hall effect in $\text{SmFeAsO}_{1-x}\text{F}_x$. Journal of Physics Condensed Matter, 2009, 21, 412201.	1.8	6
95	Measurement of the angle dependence of magnetostriction in pulsed magnetic fields using a piezoelectric strain gauge. Review of Scientific Instruments, 2018, 89, 085109.	1.3	6
96	Growth of nematic susceptibility in the field-induced normal state of an iron-based superconductor revealed by elastoresistivity measurements in a 65 Å pulsed magnet. Physical Review B, 2019, 100, .	3.2	6
97	Large, linear c-axis magnetoresistance in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$. Physica C: Superconductivity and Its Applications, 2000, 341-348, 1877-1878.	1.2	5
98	Acoustical measurements on the heavy fermion compound URu_2Si_2 in pulsed magnetic fields. Physica B: Condensed Matter, 2002, 312-313, 224-225.	2.7	5
99	SINGLE-WALL CARBON NANOTUBES ADDITION EFFECTS ON THE SUPERCONDUCTING PROPERTIES OF MgB_2 . International Journal of Modern Physics B, 2009, 23, 3465-3469.	2.0	5
100	Cryogenic goniometer for measurements in pulsed magnetic fields fabricated via additive manufacturing technique. Review of Scientific Instruments, 2020, 91, 036102.	1.3	5
101	The magnetoresistance and Hall effect in CeFeAsO : a high magnetic field study. Journal of Physics: Conference Series, 2011, 273, 012110.	0.4	4
102	Linear magnetoresistance with a universal energy scale in the strong-coupling superconductor $\text{Mo}_8\text{Ga}_4\text{I}$ without quantum criticality. Physical Review B, 2020, 102, .	3.2	4
103	Landau levels and shallow donor states in $\text{GaAs}/\text{AlGaAs}$ multiple quantum wells at megagauss magnetic fields. Physical Review B, 2017, 95, .	3.2	3
104	Magnetoelastic standing waves induced in UO_2 by microsecond magnetic field pulses. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	3
105	Multiferroic behavior in organo-metallics. Journal of Physics: Conference Series, 2011, 273, 012132.	0.4	2
106	Nanostructured epitaxial thin films of Fe-based superconductors with enhanced superconducting properties. Materials Research Society Symposia Proceedings, 2012, 1434, 35.	0.1	2
107	Robust magnetic order of Ce 4f-electrons coexisting with superconductivity in $\text{CeFeAsO}_{1-x}\text{F}_x$. Journal of the Korean Physical Society, 2013, 62, 2001-2003.	0.7	2
108	Reaching the equilibrium state of the frustrated triangular Ising magnet CaMO_6 . Physical Review B, 2022, 105, .	3.2	2

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109	Low-temperature normal state of Bi-2201 in a wide doping range: Where does the metal to insulator crossover take place?. Physica C: Superconductivity and Its Applications, 2000, 341-348, 641-642.	1.2	1
110	Insight into fiber Bragg sensor response at 100-MHz interrogation rates under various dynamic loading conditions. Proceedings of SPIE, 2015, , .	0.8	1
111	Composite pressure cell for pulsed magnets. Review of Scientific Instruments, 2021, 92, 023903.	1.3	1
112	ULTRASONIC MEASUREMENTS AT THE METAMAGNETIC TRANSITION IN URu2Si2. International Journal of Modern Physics B, 2002, 16, 3037-3040.	2.0	0
113	DEVELOPMENT OF ADVANCED INSTRUMENTATION FOR STATIC AND PULSED FIELDS. International Journal of Modern Physics B, 2002, 16, 3398-3398.	2.0	0
114	LOW-TEMPERATURE NORMAL-STATE HALL EFFECT IN HIGH-TcBi2Sr2-xLaxCuO6+ δ REVEALED BY 60 T MAGNETIC FIELDS. International Journal of Modern Physics B, 2002, 16, 3171-3174.	2.0	0
115	MgO platelets and high critical field in MgB2thin films doped with carbon from methane. Superconductor Science and Technology, 2010, 23, 049801-049801.	3.5	0
116	Studies of thermal dissolution of RDX in TNT melt. AIP Conference Proceedings, 2017, , .	0.4	0
117	Cyclotron and combined phonon-assisted resonances in the double-well heterostructure In0.65Ga0.35As/In0.52Al0.48As at megagauss magnetic fields. Physical Review B, 2018, 98, .	3.2	0