Fedor Balakirev

List of Publications by Year
in descending order

117 papers	6,121 citations	101543 36 h-index	71685 76 g-index
121 all docs	121 docs citations	121 times ranked	5125 citing authors

#	Article	IF	Citations
1	Reaching the equilibrium state of the frustrated triangular Ising magnet <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow><mml:mi>Ca</mml:mi></mml:mrow><mml:mn>3</mml:mn></mml:msub><mml:mi mathvariant="normal">O</mml:mi></mml:mrow><mml:mn>6</mml:mn></mml:msub></mml:math>. Physical Review B, 2022, 105, .	3.2	2
2	High-Temperature Superconductivity in Hydrides: Experimental Evidence and Details. Journal of Superconductivity and Novel Magnetism, 2022, 35, 965-977.	1.8	32
3	Magnetic field screening in hydrogen-rich high-temperature superconductors. Nature Communications, 2022, 13, .	12.8	32
4	Scale-invariant magnetic anisotropy in RuCl3 at high magnetic fields. Nature Physics, 2021, 17, 240-244.	16.7	25
5	Composite pressure cell for pulsed magnets. Review of Scientific Instruments, 2021, 92, 023903.	1.3	1
6	Determining elastic anisotropy of textured polycrystals using resonant ultrasound spectroscopy. Journal of Materials Science, 2021, 56, 10053-10073.	3.7	10
7	Unusual high-field metal in a Kondo insulator. Nature Physics, 2021, 17, 788-793.	16.7	24
8	Spin-valley locking and bulk quantum Hall effect in a noncentrosymmetric Dirac semimetal BaMnSb2. Nature Communications, 2021, 12, 4062.	12.8	32
9	Superconductivity up to 243â€‰K in the yttrium-hydrogen system under high pressure. Nature Communications, 2021, 12, 5075.	12.8	202
10	High-temperature superconductivity on the verge of a structural instability in lanthanum superhydride. Nature Communications, 2021, 12, 6863.	12.8	40
11	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
12	Non-monotonic pressure dependence of high-field nematicity and magnetism in CeRhIn5. Nature Communications, 2020, 11, 3482.	12.8	9
13	Cryogenic goniometer for measurements in pulsed magnetic fields fabricated via additive manufacturing technique. Review of Scientific Instruments, 2020, 91, 036102.	1.3	5
14	Detection of Hole Pockets in the Candidate Type-II Weyl Semimetal <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>MoTe</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow> from Shubnikovâ€“de Haas Quantum Oscillations. Physical Review Letters, 2020, 124, 076402.	7.8	15
15	Linear magnetoresistance with a universal energy scale in the strong-coupling superconductor Mo8Ga41 without quantum criticality. Physical Review B, 2020, 102, .	3.2	4
16	Intrinsic anisotropy versus effective pinning anisotropy in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>YB</mml:mi><mml:msub><mml:mi mathvariant="normal">a</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">C</mml:mi><mml:msub><mml:mi mathvariant="normal">u</mml:mi><mml:mn>3</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>7</mml:mn></mml:msub></mml:mrow></mml:math> thin f	3.2	11
17	Phase stabilization by electronic entropy in plutonium. Nature Communications, 2019, 10, 3159.	12.8	8
18	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

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19	Growth of nematic susceptibility in the field-induced normal state of an iron-based superconductor revealed by elastoresistivity measurements in a 65ÂT pulsed magnet. Physical Review B, 2019, 100, .	3.2	6
20	Superconducting phaseÂdiagram of H3S under high magnetic fields. Nature Communications, 2019, 10, 2522.	12.8	62
21	Superconductivity at 250 K in lanthanum hydride under high pressures. Nature, 2019, 569, 528-531.	27.8	960
22	Dynamics and Critical Currents in Fast Superconducting Vortices at High pulsed Magnetic Fields. Physical Review Applied, 2019, 11, .	3.8	7
23	Nonsaturating large magnetoresistance in the high carrier density nonsymmorphic metal CrP. Physical Review B, 2019, 99, .	3.2	10
24	Anisotropic upper critical field of pristine and proton-irradiated single crystals of the magnetically ordered superconductor <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">RbEuFe</mml:mi><mml:mn>4</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">As</mml:mi><mml:mn>4</mml:mn></mml:msub></mml:math>. Physical Review B, 2019, 100, .	3.2	15
25	Resonant ultrasound spectroscopy: The essential toolbox. Review of Scientific Instruments, 2019, 90, 121401.	1.3	50
26	Extreme magnetic field-boosted superconductivity. Nature Physics, 2019, 15, 1250-1254.	16.7	138
27	Enhanced Hybridization Sets the Stage for Electronic Nematicity in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>CeRhIn</mml:mi></mml:mrow><mml:mrow><mml:mn>5</mml:mn></mml:mr	7.8	19
	Physical Review Letters, 2019, 122, 016402.		
28	Quantum oscillations in the type-II Dirac semi-metal candidate PtSe₂. New Journal of Physics, 2018, 20, 043008.	2.9	28
29	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
30	Magnetic field-induced ferroelectricity in Sâ€‰=â€‰1/2 kagome staircase compound PbCu3TeO7. Npj Quantum Materials, 2018, 3, .	5.2	25
31	Scale-invariant magnetoresistance in a cuprate superconductor. Science, 2018, 361, 479-481.	12.6	100
32	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
33	Quantum limit transport and destruction of the Weyl nodes in TaAs. Nature Communications, 2018, 9, 2217.	12.8	71
34	Landau levels and shallow donor states in GaAs/AlGaAs multiple quantum wells at megagauss magnetic fields. Physical Review B, 2017, 95, .	3.2	3
35	Extreme Magneto-transport of Bulk Carbon Nanotubes in Sorted Electronic Concentrations and Aligned High Performance Fiber. Scientific Reports, 2017, 7, 12193.	3.3	19
36	Emergent magnetic anisotropy in the cubic heavy-fermion metal CeIn3. Npj Quantum Materials, 2017, 2, .	5.2	14

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37	A magnetic topological semimetal Sr1â^'yMn1â^'zSb2 (y, z < 0.1). Nature Materials, 2017, 16, 905-910.	27.5	135
38	Reduction of the low-temperature bulk gap in samarium hexaboride under high magnetic fields. Physical Review B, 2017, 95, .	3.2	10
39	Magnetic field tuning of an excitonic insulator between the weak and strong coupling regimes in quantum limit graphite. Scientific Reports, 2017, 7, 1733.	3.3	20
40	Electronic in-plane symmetry breaking at field-tuned quantum criticality in CeRhIn5. Nature, 2017, 548, 313-317.	27.8	89
41	Studies of thermal dissolution of RDX in TNT melt. AIP Conference Proceedings, 2017, , .	0.4	0
42	Fiber Bragg Grating Dilatometry in Extreme Magnetic Field and Cryogenic Conditions. Sensors, 2017, 17, 2572.	3.8	24
43	An FBG Optical Approach to Thermal Expansion Measurements under Hydrostatic Pressure. Sensors, 2017, 17, 2543.	3.8	9
44	Fermi-surface topologies and low-temperature phases of the filled skutterudite compounds<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>CeOs</mml:mi><mml:mn>4</mml:mn></mml xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>NdOs</mml:mi><mml:mn>4</mml:mn></mml Physical Review B, 2016, 94, .	3.2	7
45	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
46	Anisotropic thermodynamic and transport properties of single-crystalline<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>CaKFe</mml:mi><mml:mn>4</mml:mn></mml Physical Review B, 2016, 94, .	3.2	116
47	Upper Critical Field and Kondo Effects in Fe(Te0.9Se0.1) Thin Films by Pulsed Field Measurements. Scientific Reports, 2016, 6, 21469.	3.3	14
48	Thermodynamic signature of a magnetic-field-driven phase transition within the superconducting state of an underdoped cuprate. Nature Physics, 2016, 12, 47-51.	16.7	14
49	Anisotropy reversal of the upper critical field at low temperatures and spin-locked superconductivity in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mtext>K</mml:mtext><mml:mn>2</mml:mn> Physical Review B, 2015, 91, .	3.2	55
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	Fragile charge order in the nonsuperconducting ground state of the underdoped high-temperature superconductors. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 9568-9572.	7.1	13
52	Field-induced density wave in the heavy-fermion compound CeRhIn5. Nature Communications, 2015, 6, 6663.	12.8	36
53	Insight into fiber Bragg sensor response at 100-MHz interrogation rates under various dynamic loading conditions. Proceedings of SPIE, 2015, , .	0.8	1
54	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

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55	Inversion of the upper critical field anisotropy in FeTeS films. Superconductor Science and Technology, 2014, 27, 044005.	3.5	10
56	Normal-state nodal electronic structure in underdoped high-Tc copper oxides. Nature, 2014, 511, 61-64.	27.8	85
57	Robust magnetic order of Ce 4f-electrons coexisting with superconductivity in CeFeAsO1âˆ’x F x. Journal of the Korean Physical Society, 2013, 62, 2001-2003.	0.7	2
58	Bounding the pseudogap with a line of phase transitions in YBa2Cu3O6+Î´. Nature, 2013, 498, 75-77.	27.8	159
59	Nanostructured epitaxial thin films of Fe-based superconductors with enhanced superconducting properties. Materials Research Society Symposia Proceedings, 2012, 1434, 35.	0.1	2
60	Upper critical field and thermally activated flux flow in single-crystalline<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mi mathvariant="bold">Tl</mml:mi><mml:mrow><mml:mn mathvariant="bold">0</mml:mn><mml:mo>.</mml:mo><mml:mn mathvariant="bold">58</mml:mn></mml:mrow></mml:msub><mml:msub><mml:mi mathvariant="bold">Rb</mml:mi><mml:mrow><mml:mn mathvariant="bold">0</mml:mn><mml:mo>.</m	3.2	30
61	Multiferroic behavior in organo-metallics. Journal of Physics: Conference Series, 2011, 273, 012132.	0.4	2
62	Heat capacity through the magnetic-field-induced resistive transition in an underdoped high-temperatureÂsuperconductor. Nature Physics, 2011, 7, 332-335.	16.7	116
63	Significant enhancement of upper critical fields by doping and strain in iron-based superconductors. Physical Review B, 2011, 84, .	3.2	135
64	Upper critical field of the 122-type iron pnictide superconductors. Journal of Physics and Chemistry of Solids, 2011, 72, 423-425.	4.0	7
65	Fermi surface of CePt2In7: A two-dimensional analog of CeIn3. Physical Review B, 2011, 83, .	3.2	25
66	The magnetoresistance and Hall effect in CeFeAsO: a high magnetic field study. Journal of Physics: Conference Series, 2011, 273, 012110.	0.4	4
67	Upper critical field and its anisotropy in LiFeAs. Physical Review B, 2011, 83, .	3.2	58
68	Rearrangement of the antiferromagnetic ordering at high magnetic fields in SmFeAsO and SmFeAsO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow /><mml:mrow><mml:mn>0</mml:mn><mml:mo>.</mml:mo><mml:mn>9</mml:mn></mml:mrow></mml:msub><mml:mrow /></mml:m	3.2	18
69	Quantum oscillations of the superconductor LaRu2P2: Comparable mass enhancementÎ»â‰ˆ1in Ru and Fe phosphides. Physical Review B, 2011, 84, .	3.2	11
70	Nearly isotropic upper critical fields in a SrFe1.85Co0.15As2 single crystal. Physica C: Superconductivity and Its Applications, 2010, 470, S317-S319.	1.2	9
71	High magnetic-field scales and critical currents in SmFeAs(O,ÂF) crystals. Nature Materials, 2010, 9, 628-633.	27.5	125
72	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

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73	Weak anisotropy of the superconducting upper critical field in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>Fe</mml:mtext></mml:mrow><mml:mrow><mml:mn>1.11</mml:mn></mml:mrow> crystals. Physical Review B, 2010, 81, .	3.2	135
74	Magnetically induced electric polarization in an organometallic magnet. Physical Review B, 2010, 82, .	3.2	30
75	Nanoscale disorder in pure and doped MgB₂thin films. Superconductor Science and Technology, 2010, 23, 095008.	3.5	13
76	Quantum Phase Transition in the Magnetic-Field-Induced Normal State of Optimum-Doped High-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>T</mml:mi><mml:mi>c</mml:mi></mml:msub></mml:math>Cuprate Superconductors at Low Temperatures. Physical Review Letters, 2009, 102, 017004.	7.8	64
77	Pseudoisotropic Upper Critical Field in Cobalt-Doped<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>SrFe</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi>As</mml:mi> Films. Physical Review Letters, 2009, 102, 117004.	7.8	104
78	Doping dependence of the upper critical field and Hall resistivity ofLaFeAsO1â^'xFx(x=0, 0.025, 0.05, 0.07,) Tj ETQq0 0 0 rgBT /Overlock	3.2	28
79	Magnetic-field-inducedlog-Tinsulating behavior in the resistivity of fluorine-dopedSmFeAsO1â^'xFx. Physical Review B, 2009, 79, .	3.2	16
80	SINGLE-WALL CARBON NANOTUBES ADDITION EFFECTS ON THE SUPERCONDUCTING PROPERTIES OF MgB₂. International Journal of Modern Physics B, 2009, 23, 3465-3469.	2.0	5
81	Anisotropy of the Upper Critical Field in a Co-Doped BaFe₂As₂ Single Crystal. Journal of the Physical Society of Japan, 2009, 78, 084719.	1.6	117
82	Nearly isotropic superconductivity in (Ba,K)Fe2As2. Nature, 2009, 457, 565-568.	27.8	479
83	Doping dependent nonlinear Hall effect in SmFeAsO_{1â^'x}F_x. Journal of Physics Condensed Matter, 2009, 21, 412201.	1.8	6
84	Upper critical fields and thermally-activated transport of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>NdFeAsO</mml:mtext></mml:mrow><mml:mrow><mml:mn>0.7</mml:mn> crystal. Physical Review B, 2008, 78, .	3.2	303
85	Comparative high-field magnetotransport of the oxypnictide superconductorsRFeAsO1â^'xFx(R=La, Nd) andSmFeAsO1â^'ÎŽ. Physical Review B, 2008, 78, .	3.2	121
86	Disorder, metal-insulator crossover and phase diagram in high-T _c cuprates. Europhysics Letters, 2008, 81, 37008.	2.0	67
87	SiC and carbon nanotube distinctive effects on the superconducting properties of bulk MgB2. Journal of Applied Physics, 2008, 103, 023907.	2.5	56
88	Quantum Oscillations in the Underdoped Cuprate<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>YBa</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi>Cu</mml:mi><mml:mi mathvariant="normal">O</mml:mi><mml:mn>8</mml:mn></mml:msub></mml:math>. Physical Review Letters, 2008, 100, 047003.	7.8	243
89	Smectic Vortex Phase in Optimally DopedYBa2Cu3O7Thin Films. Physical Review Letters, 2008, 100, 027004.	7.8	19
90	Hall coefficient and H c2 in underdoped LaFeAsO 0.95 F 0.05. Europhysics Letters, 2008, 84, 37005.	2.0	17

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91	High-Field Hall Resistivity and Magnetoresistance of Electron-Doped<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Pr</mml:mi><mml:mrow><mml:mn>2</mml:mn><mml:mo>â^’</mml:mo><mml:mi>x</mml:mi> Physical Review Letters, 2007, 99, 047003.	7.8	53
92	Upper critical field of electron-dopedPr2â^’xCexCuO4â^’Îin parallel magnetic fields. Physical Review B, 2007, 75, .	3.2	10
93	Correlated enhancement ofHc2andJcin carbon nanotube doped MgB2. Superconductor Science and Technology, 2007, 20, L12-L15.	3.5	74
94	Magneto-transport in LSCO high-Tc superconducting thin films. New Journal of Physics, 2006, 8, 194-194.	2.9	7
95	Fragile three-dimensionality in the quasi-one-dimensional cuprate PrBa2Cu4O8. New Journal of Physics, 2006, 8, 172-172.	2.9	14
96	Ultrasonic instrumentation for measurements in high magnetic fields. II. Pulsed magnetic fields. Review of Scientific Instruments, 2006, 77, 035105.	1.3	6
97	Weak ferromagnetism inCaB6. Physical Review B, 2004, 69, .	3.2	27
98	Quantum Phase Transitions in the Cuprate SuperconductorBi2Sr2â^’xLaxCuO6+Î´. Physical Review Letters, 2004, 92, 247004.	7.8	46
99	Examination of thec-axis resistivity ofBi2Sr2â^’xLaxCuO6+Îin magnetic fields up to 58 T. Physical Review B, 2004, 70, .	3.2	10
100	Spin reorientation and in-plane magnetoresistance of lightly dopedLa2â^’xSrxCuO4in magnetic fields up to 55 T. Physical Review B, 2004, 70, .	3.2	20
101	Signature of optimal doping in Hall-effect measurements on a high-temperature superconductor. Nature, 2003, 424, 912-915.	27.8	121
102	ULTRASONIC MEASUREMENTS AT THE METAMAGNETIC TRANSITION IN URu2Si2. International Journal of Modern Physics B, 2002, 16, 3037-3040.	2.0	0
103	DEVELOPMENT OF ADVANCED INSTRUMENTATION FOR STATIC AND PULSED FIELDS. International Journal of Modern Physics B, 2002, 16, 3398-3398.	2.0	0
104	LOW-TEMPERATURE NORMAL-STATE HALL EFFECT IN HIGH-TcBi2Sr2-xLaxCuO6+Î´ REVEALED BY 60 T MAGNETIC FIELDS. International Journal of Modern Physics B, 2002, 16, 3171-3174.	2.0	0
105	Acoustical measurements on the heavy fermion compound URu2Si2 in pulsed magnetic fields. Physica B: Condensed Matter, 2002, 312-313, 224-225.	2.7	5
106	The temperature dependence of SQUID noise at temperatures below 4 K. Physica C: Superconductivity and Its Applications, 2002, 368, 185-190.	1.2	7
107	Low-temperature normal state of Bi2Sr2â^’xLaxCuO6+Î´: comparison with La2â^’xSrxCuO4. Physica C: Superconductivity and Its Applications, 2001, 357-360, 138-141.	1.2	9
108	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

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109	Large, linear c-axis magnetoresistance in YBa2Cu3O7â^'Î´. Physica C: Superconductivity and Its Applications, 2000, 341-348, 1877-1878.	1.2	5
110	Metal-to-Insulator Crossover in the Low-Temperature Normal State ofBi2Sr2â^'xLaxCuO6+Î´. Physical Review Letters, 2000, 85, 638-641.	7.8	214
111	Giant positive magnetoresistance of Bi nanowire arrays in high magnetic fields. Journal of Applied Physics, 1999, 85, 6184-6186.	2.5	67
112	Micromechanical "Trampoline" Magnetometers for Use in Large Pulsed Magnetic Fields. Science, 1998, 280, 720-722.	12.6	22
113	Orbital magnetoresistance in theLa2â^'xSrxCuO4system. Physical Review B, 1998, 57, R8083-R8086.	3.2	16
114	High-field study of normal-state magnetotransport inTl2Ba2CuO6+Î´. Physical Review B, 1998, 57, R728-R731.	3.2	33
115	Normal-state Hall effect and the insulating resistivity of high-Tccuprates at low temperatures. Physical Review B, 1997, 56, R8530-R8534.	3.2	39
116	Electrodynamics of high-temperature superconductors investigated with coherent terahertz pulse spectroscopy. Journal of the Optical Society of America B: Optical Physics, 1996, 13, 1979.	2.1	50
117	Raman scattering study of strain in ZnxCd1â^'xTe/CdTe superlattices. Applied Physics Letters, 1992, 61, 417-419.	3.3	8