David Pines

List of Publications by Year
in descending order

115 papers	12,615 citations	36203 51 h-index	30010 103 g-index
117 all docs	117 docs citations	117 times ranked	4826 citing authors

#	Article	IF	Citations
1	A Collective Description of Electron Interactions: III. Coulomb Interactions in a Degenerate Electron Gas. Physical Review, 1953, 92, 609-625.	2.7	1,594
2	A Collective Description of Electron Interactions: II. CollectivevsIndividual Particle Aspects of the Interactions. Physical Review, 1952, 85, 338-353.	2.7	1,167
3	Phenomenological model of nuclear relaxation in the normal state ofYBa2Cu3O7. Physical Review B, 1990, 42, 167-178.	1.1	970
4	A Collective Description of Electron Interactions. I. Magnetic Interactions. Physical Review, 1951, 82, 625-634.	2.7	578
5	A Collective Description of Electron Interactions: IV. Electron Interaction in Metals. Physical Review, 1953, 92, 626-636.	2.7	480
6	Collective Energy Losses in Solids. Reviews of Modern Physics, 1956, 28, 184-198.	16.4	477
7	Electron-Phonon Interaction in Metals. Physical Review, 1955, 99, 1140-1150.	2.7	366
8	Superfluidity in Neutron Stars. Nature, 1969, 224, 673-674.	13.7	358
9	Spin Up in Neutron Stars : The Future of the Vela Pulsar. Nature, 1969, 224, 872-874.	13.7	319
10	Toward a unified magnetic phase diagram of the cuprate superconductors. Physical Review Letters, 1993, 71, 2813-2816.	2.9	229
11	Superfluidity in neutron stars. Nature, 1985, 316, 27-32.	13.7	216
12	Electron Interaction in Solids. Collective Approach to the Dielectric Constant. Physical Review, 1958, 109, 762-777.	2.7	212
13	Weak Pseudogap Behavior in the Underdoped Cuprate Superconductors. Physical Review Letters, 1998, 80, 3839-3842.	2.9	192
14	Electron Interaction in Solids. General Formulation. Physical Review, 1958, 109, 741-761.	2.7	188
15	Collective Behavior in Solid-State Plasmas. Physical Review, 1961, 124, 1387-1400.	2.7	187
16	Theory of the longitudinal and Hall conductivities of the cuprate superconductors. Physical Review B, 1997, 55, 8576-8595.	1.1	187
17	Scaling the Kondo lattice. Nature, 2008, 454, 611-613.	13.7	183
18	Neutron starquakes and pulsar speedup. Annals of Physics, 1971, 66, 816-835.	1.0	178

#	Article	IF	Citations
19	Elementary Excitations in Liquid Helium. Physical Review, 1962, 127, 1452-1464.	2.7	177
20	Superconductivity in the Periodic System. Physical Review, 1958, 109, 280-287.	2.7	173
21	Polarization potentials and elementary excitations in liquid 3He. Journal of Low Temperature Physics, 1978, 32, 689-715.	0.6	171
22	Two Fluid Description of the Kondo Lattice. Physical Review Letters, 2004, 92, 016401.	2.9	171
23	Transport processes in heavy-fermion superconductors. Physical Review Letters, 1986, 57, 118-121.	2.9	167
24	Electron Interaction in Metals. Solid State Physics, 1955, 1, 367-450.	1.3	163
25	Relaxation Times in Magnetic Resonance. Physical Review, 1955, 100, 1014-1020.	2.7	150
26	Mobility of Slow Electrons in Polar Crystals. Physical Review, 1955, 98, 414-418.	2.7	149
27	ELECTRON INTERACTION IN SOLIDS. Canadian Journal of Physics, 1956, 34, 1379-1394.	0.4	144
28	Approach to Equilibrium of Electrons, Plasmons, and Phonons in Quantum and Classical Plasmas. Physical Review, 1962, 125, 804-812.	2.7	136
29	Microscopic theory of weak pseudogap behavior in the underdoped cuprate superconductors: General theory and quasiparticle properties. Physical Review B, 1999, 60, 667-686.	1.1	133
30	The Resonance Peak in Cuprate Superconductors. Physical Review Letters, 1998, 81, 1086-1089.	2.9	124
31	Polarization potentials and elementary excitations in He II at low temperatures. Journal of Low Temperature Physics, 1976, 25, 677-690.	0.6	119
32	Anomalous Hall Effect inYBa2Cu3O7. Physical Review Letters, 1996, 76, 811-814.	2.9	115
33	Nearly antiferromagnetic Fermi liquids: a progress report. Zeitschrift FÃ¼r Physik B-Condensed Matter, 1996, 103, 129-135.	1.1	110
34	Theory of electron liquids. II. Static and dynamic form factors, correlation energy, and plasmon dispersion. Physical Review B, 1984, 29, 3936-3951.	1.1	99
35	Spin excitations and pairing gaps in the superconducting state ofYBa2Cu3O7âˆ'Î´. Physical Review B, 1990, 41, 6297-6305.	1.1	92
36	Universal Behavior in Heavy-Electron Materials. Physical Review Letters, 2008, 100, 096404.	2.9	87

#	Article	IF	Citations
37	Interaction of a Nonrelativistic Particle with a Scalar Field with Application to Slow Electrons in Polar Crystals. Physical Review, 1953, 92, 883-889.	2.7	85
38	Electron Interaction in Solids. The Nature of the Elementary Excitations. Physical Review, 1958, 109, 1062-1074.	2.7	79
39	Corequakes and the Vela Pulsar. Nature: Physical Science, 1972, 237, 83-84.	0.8	76
40	Spin excitations and superconductivity in cuprate oxide and heavy electron superconductors. Physica B: Condensed Matter, 1990, 163, 78-88.	1.3	72
41	Theory of electron liquids. I. Electron-hole pseudopotentials. Physical Review B, 1984, 29, 3924-3935.	1.1	71
42	Effective interactions in dilute mixtures of3He in4He. Journal of Statistical Physics, 1985, 38, 273-312.	0.5	71
43	Understanding high temperature superconductors: Progress and prospects. Physica C: Superconductivity and Its Applications, 1997, 282-287, 273-278.	0.6	71
44	dx2-y2 pairing and spin fluctuations in the cuprate superconductors: Experiment meets theory. Physica C: Superconductivity and Its Applications, 1994, 235-240, 113-121.	0.6	70
45	Effective interactions, elementary excitations, and transport in the helium liquids. Canadian Journal of Physics, 1987, 65, 1357-1367.	0.4	65
46	Emergent states in heavy-electron materials. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, E3060-6.	3.3	61
47	dx2 â^' y2 Pairing and spin fluctuations in the cuprate superconductors: A progress report. Journal of Physics and Chemistry of Solids, 1995, 56, 1651-1658.	1.9	60
48	Spin fluctuations and high temperature superconductivity in the antiferromagnetically correlated oxides: YBa2Cu3O7; YBa2Cu3O6.63; La1.85Sr0.15CuO4. Physica C: Superconductivity and Its Applications, 1991, 185-189, 120-129.	0.6	57
49	The quantum criticality conundrum. Advances in Physics, 2001, 50, 361-365.	35.9	56
50	Polarization Potentials and Transport Properties of NormalHe3. Physical Review Letters, 1980, 45, 39-42.	2.9	54
51	One-Component Fermi-Liquid Theory and the Properties of UPt3. Physical Review Letters, 1986, 57, 1955-1958.	2.9	52
52	The Motion of Slow Electrons in Polar Crystals. Physical Review, 1952, 88, 960-961.	2.7	51
53	Microquakes and Macroquakes in Neutron Stars. Nature: Physical Science, 1972, 235, 43-49.	0.8	47
54	Theory of the optical conductivity in the cuprate superconductors. Physical Review B, 1997, 56, 11931-11941.	1.1	46

#	Article	IF	Citations
55	Paramagnetic Susceptibility of Conduction Electrons. Physical Review, 1954, 95, 1090-1091.	2.7	44
56	Temperature crossovers in cuprates. Journal of Physics Condensed Matter, 1996, 8, 10017-10036.	0.7	37
57	The Mobility of Slow Electrons in Polar Crystals. Physical Review, 1953, 91, 193-194.	2.7	36
58	Unusual Transport Effects in Anisotropic Superconductors. Physical Review Letters, 1988, 60, 2206-2209.	2.9	36
59	Role of Subsidiary Conditions in the Collective Description of Electron Interactions. Physical Review, 1957, 107, 71-80.	2.7	35
60	Universal behaviour and the two-component character of magnetically underdoped cuprate superconductors. Advances in Physics, 2009, 58, 1-65.	35.9	34
61	Sum Rules, Structure Factors, and Phonon Dispersion in LiquidHe4at Long Wavelengths and Low Temperatures. Physical Review Letters, 1970, 24, 1044-1045.	2.9	32
62	Understanding high-temperature superconductivity: a progress report. Physica B: Condensed Matter, 1994, 199-200, 300-309.	1.3	31
63	The elastic energy and character of quakes in solid stars and planets. Physics of the Earth and Planetary Interiors, 1972, 6, 103-115.	0.7	28
64	Magnetic coherence in cuprate superconductors. Physical Review B, 2000, 61, R6483-R6486.	1.1	27
65	Free precession of neutron stars. Nature, 1974, 248, 483-486.	13.7	26
66	Roton liquid theory. Journal of Low Temperature Physics, 1982, 48, 417-433.	0.6	25
67	Quantum protectorates in the cuprate superconductors. Physica C: Superconductivity and Its Applications, 2000, 341-348, 59-62.	0.6	25
68	Quantum critical scaling and fluctuations in Kondo lattice materials. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 6250-6255.	3.3	24
69	Sum-Rule Analysis of Long-Wavelength Excitations in Electron Liquids. Progress of Theoretical Physics, 1975, 54, 1077-1092.	2.0	23
70	Gravitational radiation from a solid-crust neutron star. Nature, 1985, 314, 334-336.	13.7	23
71	Finding New Superconductors: The Spin-Fluctuation Gateway to High T_c and Possible Room Temperature Superconductivity. Journal of Physical Chemistry B, 2013, 117, 13145-13153.	1.2	23
72	Toward a new microscopic framework for Kondo lattice materials. Reports on Progress in Physics, 2017, 80, 024501.	8.1	23

#	Article	IF	Citations
73	Magnetic Excitations in the Kondo Liquid: Superconductivity and Hidden Magnetic Quantum Critical Fluctuations. Physical Review Letters, 2009, 103, 197004.	2.9	22
74	Emergence of superconductivity in heavy-electron materials. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 18178-18182.	3.3	21
75	The superfluid transition temperature of liquid 3He. Physics Letters, Section A: General, Atomic and Solid State Physics, 1980, 78, 281-284.	0.9	20
76	Quantum critical behavior in heavy electron materials. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 8398-8403.	3.3	20
77	Screening of Electronic Interactions in a Metal. Physical Review, 1950, 80, 903-904.	2.7	19
78	Spin-fluctuation-induced superconductivity inYBa2Cu3O6.9. Physical Review B, 1988, 37, 3730-3733.	1.1	19
79	Seismic Activity, Polar Tides and the Chandler Wobble. Nature, 1973, 245, 77-81.	13.7	18
80	The ghost of magnetism. Nature, 1998, 394, 22-23.	13.7	17
81	Plasma oscillations of electron gases. Physica, 1960, 26, S103-S123.	0.9	16
82	Knight shift and spin-echo decay time of YBa2Cu4O8and YBa2Cu3O7in the superconducting state. Physical Review B, 1996, 53, 5915-5921.	1.1	16
83	Ground-State Energy and Stopping Power of an Electron Gas. Physical Review, 1958, 109, 1009-1010.	2.7	15
84	On the fast recovery of the Vela pulsar from its Christmas 1988 glitch. Nature, 1990, 348, 707-708.	13.7	14
85	Phenomenological Model of Protected Behavior in the Pseudogap State of Underdoped Cuprate Superconductors. Physical Review Letters, 2006, 96, 247002.	2.9	13
86	Complex Adaptive Matter: Emergent Phenomena in Materials. MRS Bulletin, 2005, 30, 425-432.	1.7	12
87	Emergent behavior in strongly correlated electron systems. Reports on Progress in Physics, 2016, 79, 092501.	8.1	12
88	Neutron Star Structure from Pulsar Observations. , 1974, , 189-207.		12
89	The Stopping Power of a Metal for Charged Particles. Physical Review, 1952, 85, 931-931.	2.7	11
90	Scaling and the Magnetic Origin of Emergent Behavior in Correlated Electron Superconductors. MRS Bulletin, 2005, 30, 442-446.	1.7	11

#	Article	IF	Citations
91	Can Pulsar Masses be Determined ?. Nature, 1970, 225, 353-354.	13.7	10
92	Nearly antiferromagnetic Fermi liquids are high temperature superconductors: Are the superconducting cuprates nearly antiferromagnetic liquids?. Journal of Physics and Chemistry of Solids, 1993, 54, 1447-1455.	1.9	10
93	Magnetic coherence as a universal feature of cuprate superconductors. Physical Review B, 2000, 62, 15177-15182.	1.1	10
94	Quadrupolar Analysis of Storage and Release of Elastic Energy in the Earth. Nature: Physical Science, 1973, 243, 122-127.	0.8	8
95	Quantum critical scaling and superconductivity in heavy electron materials. Physical Review B, 2015, 92, .	1.1	8
96	Neutron Star Structure from Pulsar Observations. Symposium - International Astronomical Union, 1974, 53, 189-207.	0.1	5
97	Richard Feynman and Condensed Matter Physics. Physics Today, 1989, 42, 61-66.	0.3	5
98	Vortex Creep Dynamics: Theory and Observations. , 1989, , 441-455.		4
99	"Extended Electron-Gas Hamiltonian" â€" an Author's Comment. Physical Review B, 1970, 2, 1424-1425.	1.1	3
100	WEAK PSEUDOGAP BEHAVIOR IN THE UNDERDOPED CUPRATE SUPERCONDUCTORS. Journal of Physics and Chemistry of Solids, 1998, 59, 1764-1768.	1.9	3
101	Neutron Stars as Cosmic Hadron Physics Laboratories. , 1987, , 193-208.		3
102	An Extraordinary Man: Reflections on John Bardeen. Physics Today, 1992, 45, 64-70.	0.3	2
103	StojkoviÄ‡ and Pines Reply:. Physical Review Letters, 1997, 78, 978-978.	2.9	2
104	Excitations and transport in quantum liquids. Lecture Notes in Physics, 1981, , 202-219.	0.3	1
105	Effective interactions and elementary excitations in electron and Helium liquids. , 1984, , 113-126.		1
106	Spin fluctuations and $$d_{x^2 - y^2 }$$ pairing in the cuprate superconductors: A progress report. , 1996, , 201-220.		1
107	Up Close: The Institute for Complex Adaptive Matter, An Emergent Institution. MRS Bulletin, 2004, 29, 963-966.	1.7	1
108	SUPERCONDUCTIVITY: FROM ELECTRON INTERACTION TO NUCLEAR SUPERFLUIDITY. International Journal of Modern Physics B, 2010, 24, 3814-3834.	1.0	1

#	Article	IF	Citations
109	Heavy Electron Superconductivity: From 1K to 90K to ?. , 1987, , 201-214.		1
110	Unconventional superconductors: from 1 mK to 90 K to 1010 K. AIP Conference Proceedings, 1988, , .	0.3	0
111	The Spin Fluctuation Model for High Temperature Superconductivity: Progress and Prospects. , 2002, , 111-142.		0
112	What We Don't Understand, We Explain to Each Other. Physics Teacher, 2015, 53, 526-531.	0.2	0
113	SUPERCONDUCTIVITY: FROM ELECTRON INTERACTION TO NUCLEAR SUPERFLUIDITY. , 2010, , 85-105.		0
114	Neutron Starquakes and Pulsar Speedup. , 1972, , 816-835.		0
115	Understanding Heavy Electron Systems. , 1988, , 17-29.		0