

# David Colton

## List of Publications by Year in descending order

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153  
papers

8,312  
citations

66250

44  
h-index

51423

90  
g-index

156  
all docs

156  
docs citations

156  
times ranked

1796  
citing authors

#	ARTICLE	IF	CITATIONS
1	Inverse Acoustic and Electromagnetic Scattering Theory. Applied Mathematical Sciences (Switzerland), 2019, , .	0.4	162
2	5. Eigenvalue problems in inverse electromagnetic scattering theory. , 2019, , 145-170.		7
3	Inverse Acoustic Obstacle Scattering. Applied Mathematical Sciences (Switzerland), 2019, , 137-217.	0.4	1
4	The Maxwell Equations. Applied Mathematical Sciences (Switzerland), 2019, , 219-272.	0.4	0
5	Acoustic Waves in an Inhomogeneous Medium. Applied Mathematical Sciences (Switzerland), 2019, , 303-344.	0.4	0
6	Electromagnetic Waves in an Inhomogeneous Medium. Applied Mathematical Sciences (Switzerland), 2019, , 345-369.	0.4	0
7	Inverse Electromagnetic Obstacle Scattering. Applied Mathematical Sciences (Switzerland), 2019, , 273-302.	0.4	0
8	Direct Acoustic Obstacle Scattering. Applied Mathematical Sciences (Switzerland), 2019, , 43-110.	0.4	0
9	The Inverse Medium Problem. Applied Mathematical Sciences (Switzerland), 2019, , 439-495.	0.4	0
10	Transmission Eigenvalues. Applied Mathematical Sciences (Switzerland), 2019, , 371-437.	0.4	0
11	Looking Back on Inverse Scattering Theory. SIAM Review, 2018, 60, 779-807.	4.2	45
12	Peter Monk and inverse scattering theory. Computers and Mathematics With Applications, 2017, 74, 2640-2644.	1.4	2
13	The inverse spectral problem for transmission eigenvalues. Inverse Problems, 2017, 33, 055015.	1.0	5
14	Qualitative Methods in Inverse Electromagnetic Scattering Theory: Inverse Scattering for Anisotropic Media. IEEE Antennas and Propagation Magazine, 2017, 59, 24-33.	1.2	15
15	The existence of complex transmission eigenvalues for spherically stratified media. Applicable Analysis, 2017, 96, 39-47.	0.6	17
16	The Born transmission eigenvalue problem. Inverse Problems, 2016, 32, 105014.	1.0	2
17	Distribution of complex transmission eigenvalues for spherically stratified media. Inverse Problems, 2015, 31, 035006.	1.0	35
18	Inverse Scattering. , 2015, , 649-700.		0

#	ARTICLE	IF	CITATIONS
19	A Qualitative Approach to Inverse Scattering Theory. Applied Mathematical Sciences (Switzerland), 2014, , .	0.4	113
20	Ill-Posed Problems. Applied Mathematical Sciences (Switzerland), 2014, , 27-43.	0.4	40
21	Mixed Boundary Value Problems. Applied Mathematical Sciences (Switzerland), 2014, , 203-261.	0.4	0
22	Inverse Scattering Problems for Orthotropic Media. Applied Mathematical Sciences (Switzerland), 2014, , 111-163.	0.4	0
23	Scattering by Imperfect Conductors. Applied Mathematical Sciences (Switzerland), 2014, , 45-61.	0.4	0
24	Inverse Scattering Problems for Imperfect Conductors. Applied Mathematical Sciences (Switzerland), 2014, , 63-83.	0.4	0
25	Inverse Spectral Problems for Transmission Eigenvalues. Applied Mathematical Sciences (Switzerland), 2014, , 263-277.	0.4	0
26	A Glimpse at Maxwell's Equations. Applied Mathematical Sciences (Switzerland), 2014, , 279-285.	0.4	0
27	Functional Analysis and Sobolev Spaces. Applied Mathematical Sciences (Switzerland), 2014, , 1-26.	0.4	0
28	Factorization Methods. Applied Mathematical Sciences (Switzerland), 2014, , 165-202.	0.4	0
29	Scattering by Orthotropic Media. Applied Mathematical Sciences (Switzerland), 2014, , 85-109.	0.4	0
30	The Helmholtz Equation. Applied Mathematical Sciences (Switzerland), 2013, , 13-38.	0.4	1
31	Ill-Posed Problems. Applied Mathematical Sciences (Switzerland), 2013, , 95-118.	0.4	1
32	The Inverse Medium Problem. Applied Mathematical Sciences (Switzerland), 2013, , 325-388.	0.4	2
33	The Maxwell Equations. Applied Mathematical Sciences (Switzerland), 2013, , 187-236.	0.4	6
34	Direct Acoustic Obstacle Scattering. Applied Mathematical Sciences (Switzerland), 2013, , 39-94.	0.4	0
35	Inverse Acoustic Obstacle Scattering. Applied Mathematical Sciences (Switzerland), 2013, , 119-186.	0.4	2
36	Acoustic Waves in an Inhomogeneous Medium. Applied Mathematical Sciences (Switzerland), 2013, , 265-302.	0.4	1

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37	Inverse Electromagnetic Obstacle Scattering. Applied Mathematical Sciences (Switzerland), 2013, , 237-264.	0.4	2
38	Complex eigenvalues and the inverse spectral problem for transmission eigenvalues. Inverse Problems, 2013, 29, 104008.	1.0	62
39	Electromagnetic Waves in an Inhomogeneous Medium. Applied Mathematical Sciences (Switzerland), 2013, , 303-324.	0.4	0
40	The interior transmission eigenvalue problem for absorbing media. Inverse Problems, 2012, 28, 045005.	1.0	17
41	Complex transmission eigenvalues for spherically stratified media. Inverse Problems, 2012, 28, 075005.	1.0	57
42	The inverse scattering problem for cavities. Applied Numerical Mathematics, 2012, 62, 699-708.	1.2	46
43	The inverse scattering problem for cavities with impedance boundary condition. Advances in Computational Mathematics, 2012, 36, 157-174.	0.8	43
44	Inverse Scattering. , 2011, , 551-598.		3
45	The determination of boundary coefficients from far field measurements. Journal of Integral Equations and Applications, 2010, 22, .	0.2	21
46	On the determination of Dirichlet or transmission eigenvalues from far field data. Comptes Rendus Mathematique, 2010, 348, 379-383.	0.1	117
47	The inverse electromagnetic scattering problem for anisotropic media. Inverse Problems, 2010, 26, 074004.	1.0	80
48	Analytical and computational methods for transmission eigenvalues. Inverse Problems, 2010, 26, 045011.	1.0	103
49	The Interior Transmission Eigenvalue Problem. SIAM Journal on Mathematical Analysis, 2010, 42, 2912-2921.	0.9	87
50	The Interior Transmission Problem for Regions with Cavities. SIAM Journal on Mathematical Analysis, 2010, 42, 145-162.	0.9	67
51	Transmission eigenvalues and the nondestructive testing of dielectrics. Inverse Problems, 2008, 24, 065016.	1.0	57
52	On the use of transmission eigenvalues to estimate the index of refraction from far field data. Inverse Problems, 2007, 23, 507-522.	1.0	84
53	The inverse electromagnetic scattering problem for a partially coated dielectric. Journal of Computational and Applied Mathematics, 2007, 204, 256-267.	1.1	8
54	The interior transmission problem. Inverse Problems and Imaging, 2007, 1, 13-28.	0.6	179

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55	Using fundamental solutions in inverse scattering. <i>Inverse Problems</i> , 2006, 22, R49-R66.	1.0	105
56	An application of the reciprocity gap functional to inverse scattering theory. <i>Inverse Problems</i> , 2005, 21, 383-398.	1.0	112
57	The Determination of the Surface Conductivity of a Partially Coated Dielectric. <i>SIAM Journal on Applied Mathematics</i> , 2005, 65, 767-789.	0.8	48
58	The Determination of the Surface Impedance of a Partially Coated Obstacle from Far Field Data. <i>SIAM Journal on Applied Mathematics</i> , 2004, 64, 709-723.	0.8	83
59	The electromagnetic inverse-scattering problem for partly coated Lipschitz domains. <i>Proceedings of the Royal Society of Edinburgh Section A: Mathematics</i> , 2004, 134, 661-682.	0.8	52
60	A target signature for distinguishing perfect conductors from anisotropic media of finite conductivity. <i>Mathematics and Computers in Simulation</i> , 2004, 66, 325-335.	2.4	1
61	A UNIQUENESS THEOREM FOR AN INVERSE ELECTROMAGNETIC SCATTERING PROBLEM IN INHOMOGENEOUS ANISOTROPIC MEDIA. <i>Proceedings of the Edinburgh Mathematical Society</i> , 2003, 46, 293-314.	0.2	53
62	Combined far-field operators in electromagnetic inverse scattering theory. <i>Mathematical Methods in the Applied Sciences</i> , 2003, 26, 413-429.	1.2	42
63	The linear sampling method in inverse electromagnetic scattering theory. <i>Inverse Problems</i> , 2003, 19, S105-S137.	1.0	277
64	The Linear Sampling Method for Solving the Electromagnetic Inverse Scattering Problem. <i>SIAM Journal of Scientific Computing</i> , 2003, 24, 719-731.	1.3	101
65	The inverse electromagnetic scattering problem for screens. <i>Inverse Problems</i> , 2003, 19, 627-642.	1.0	11
66	The linear sampling method for cracks. <i>Inverse Problems</i> , 2003, 19, 279-295.	1.0	120
67	Herglotz Wave Functions in Inverse Electromagnetic Scattering Theory. <i>Lecture Notes in Computational Science and Engineering</i> , 2003, , 367-394.	0.1	4
68	The linear sampling method for anisotropic media. <i>Journal of Computational and Applied Mathematics</i> , 2002, 146, 285-299.	1.1	88
69	The direct and inverse scattering problems for partially coated obstacles. <i>Inverse Problems</i> , 2001, 17, 1997-2015.	1.0	85
70	On the denseness of Herglotz wave functions and electromagnetic Herglotz pairs in Sobolev spaces. <i>Mathematical Methods in the Applied Sciences</i> , 2001, 24, 1289-1303.	1.2	79
71	Inequalities for inverse scattering problems in absorbing media. <i>Inverse Problems</i> , 2001, 17, 597-605.	1.0	6
72	AN APPROXIMATION PROPERTY OF IMPORTANCE IN INVERSE SCATTERING THEORY. <i>Proceedings of the Edinburgh Mathematical Society</i> , 2001, 44, 449-454.	0.2	43

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73	Transmission eigenvalues and a problem of Hans Lewy. <i>Journal of Computational and Applied Mathematics</i> , 2000, 117, 91-104.	1.1	12
74	Recent Developments in Inverse Acoustic Scattering Theory. <i>SIAM Review</i> , 2000, 42, 369-414.	4.2	328
75	A Regularized Sampling Method for Solving Three-Dimensional Inverse Scattering Problems. <i>SIAM Journal of Scientific Computing</i> , 2000, 21, 2316-2330.	1.3	78
76	The Linear Sampling Method in Inverse Scattering Theory. , 2000, , 107-118.		1
77	A Linear Sampling Method for the Detection of Leukemia Using Microwaves II. <i>SIAM Journal on Applied Mathematics</i> , 1999, 60, 241-255.	0.8	31
78	A Linear Sampling Method for the Detection of Leukemia Using Microwaves. <i>SIAM Journal on Applied Mathematics</i> , 1998, 58, 926-941.	0.8	73
79	The simple method for solving the electromagnetic inverse scattering problem: the case of TE polarized waves. <i>Inverse Problems</i> , 1998, 14, 597-614.	1.0	45
80	Inverse Acoustic and Electromagnetic Scattering Theory. <i>Applied Mathematical Sciences (Switzerland)</i> , 1998, , .	0.4	1,338
81	2. Multidimensional Inverse Scattering Theory. , 1997, , 25-66.		0
82	A simple method using Morozov's discrepancy principle for solving inverse scattering problems. <i>Inverse Problems</i> , 1997, 13, 1477-1493.	1.0	270
83	Inverse scattering from an orthotropic medium. <i>Journal of Computational and Applied Mathematics</i> , 1997, 81, 269-298.	1.1	51
84	A New Algorithm in Electromagnetic Inverse Scattering Theory with an Application to Medical Imaging. <i>Mathematical Methods in the Applied Sciences</i> , 1997, 20, 385-401.	1.2	10
85	A Survey of Selected Topics in Inverse Electromagnetic Scattering Theory. <i>The IMA Volumes in Mathematics and Its Applications</i> , 1997, , 105-127.	0.5	0
86	A simple method for solving inverse scattering problems in the resonance region. <i>Inverse Problems</i> , 1996, 12, 383-393.	1.0	616
87	Eigenvalues of the Far Field Operator for the Helmholtz Equation in an Absorbing Medium. <i>SIAM Journal on Applied Mathematics</i> , 1995, 55, 1724-1735.	0.8	73
88	Eigenvalues of the Far Field Operator and Inverse Scattering Theory. <i>SIAM Journal on Mathematical Analysis</i> , 1995, 26, 601-615.	0.9	64
89	On a Class of Integral Equations of the First Kind in Inverse Scattering Theory. <i>SIAM Journal on Applied Mathematics</i> , 1993, 53, 847-860.	0.8	29
90	The numerical solution of an inverse scattering problem for acoustic waves. <i>IMA Journal of Applied Mathematics</i> , 1992, 49, 163-184.	0.8	15

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91	The uniqueness of a solution to an inverse scattering problem for electromagnetic waves. Archive for Rational Mechanics and Analysis, 1992, 119, 59-70.	1.1	136
92	A comparison of two methods for solving the inverse scattering problem for acoustic waves in an inhomogeneous medium. Journal of Computational and Applied Mathematics, 1992, 42, 5-16.	1.1	22
93	The use of polarization effects in electromagnetic inverse scattering problems. Mathematical Methods in the Applied Sciences, 1992, 15, 1-10.	1.2	13
94	Inverse Acoustic and Electromagnetic Scattering Theory. Applied Mathematical Sciences (Switzerland), 1992, , .	0.4	711
95	An approximation problem in inverse scattering theory. Applicable Analysis, 1991, 41, 23-32.	0.6	17
96	Time harmonic electromagnetic waves in an inhomogeneous medium. Proceedings of the Royal Society of Edinburgh Section A: Mathematics, 1990, 116, 279-293.	0.8	32
97	The scattering of electromagnetic waves by a perfectly conducting infinite cylinder. Mathematical Methods in the Applied Sciences, 1990, 12, 503-518.	1.2	3
98	Far-Field Patterns for Electromagnetic Waves in an Inhomogeneous Medium. SIAM Journal on Mathematical Analysis, 1990, 21, 1537-1549.	0.9	15
99	FAR-FIELD PATTERNS AND THE INVERSE SCATTERING PROBLEM FOR ACOUSTIC WAVES IN AN INHOMOGENEOUS MEDIUM. Quarterly Journal of Mechanics and Applied Mathematics, 1989, 42, 317-326.	0.5	4
100	Far-Field Patterns for Acoustic Waves in an Inhomogeneous Medium. SIAM Journal on Mathematical Analysis, 1989, 20, 1472-1483.	0.9	105
101	Far field patterns and inverse scattering problems for imperfectly conducting obstacles. Mathematical Proceedings of the Cambridge Philosophical Society, 1989, 106, 553-569.	0.3	24
102	THE INVERSE SCATTERING PROBLEM FOR TIME-HARMONIC ACOUSTIC WAVES IN AN INHOMOGENEOUS MEDIUM. Quarterly Journal of Mechanics and Applied Mathematics, 1988, 41, 97-125.	0.5	164
103	Karp's theorem in acoustic scattering theory. Proceedings of the American Mathematical Society, 1988, 103, 783-788.	0.4	2
104	Karp's theorem in electromagnetic scattering theory. Proceedings of the American Mathematical Society, 1988, 104, 764-764.	0.4	2
105	Karp's Theorem in Acoustic Scattering Theory. Proceedings of the American Mathematical Society, 1988, 103, 783.	0.4	3
106	Far field patterns and the inverse scattering problem for electromagnetic waves in an inhomogeneous medium. Mathematical Proceedings of the Cambridge Philosophical Society, 1988, 103, 561-575.	0.3	20
107	Dense sets and far field patterns for acoustic waves in an inhomogeneous medium. Proceedings of the Edinburgh Mathematical Society, 1988, 31, 401-407.	0.2	2
108	The Numerical Solution of the Three-Dimensional Inverse Scattering Problem for Time Harmonic Acoustic Waves. SIAM Journal on Scientific and Statistical Computing, 1987, 8, 278-291.	1.5	82

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109	PROJECTION THEOREMS FOR FAR FIELD PATTERNS AND THE INVERSE SCATTERING PROBLEM. , 1987, , 261-277.		0
110	A Novel Method for Solving the Inverse Scattering Problem for Time-Harmonic Acoustic Waves in the Resonance Region II. SIAM Journal on Applied Mathematics, 1986, 46, 506-523.	0.8	152
111	Dense Sets and Far Field Patterns in Electromagnetic Wave Propagation. SIAM Journal on Mathematical Analysis, 1985, 16, 1049-1060.	0.9	39
112	A Novel Method for Solving the Inverse Scattering Problem for Time-Harmonic Acoustic Waves in the Resonance Region. SIAM Journal on Applied Mathematics, 1985, 45, 1039-1053.	0.8	112
113	Two Methods for Solving the Inverse Scattering Problem for Time-Harmonic Acoustic Waves. , 1985, , 103-109.		0
114	Dense Sets and Far Field Patterns in Acoustic Wave Propagation. SIAM Journal on Mathematical Analysis, 1984, 15, 996-1006.	0.9	54
115	The Numerical Solution of the Inverse Stefan Problem in Two Space Variables. SIAM Journal on Applied Mathematics, 1984, 44, 996-1013.	0.8	32
116	The Inverse Scattering Problem for Time-Harmonic Acoustic Waves. SIAM Review, 1984, 26, 323-350.	4.2	75
117	Far field patterns for the impedance boundary value problem in acoustic scattering. Applicable Analysis, 1983, 16, 131-139.	0.6	15
118	THE UNIQUE SOLVABILITY OF THE NULL FIELD EQUATIONS OF ACOUSTICS. Quarterly Journal of Mechanics and Applied Mathematics, 1983, 36, 87-95.	0.5	27
119	Uniqueness Theorems for the Inverse Problem of Acoustic Scattering. IMA Journal of Applied Mathematics, 1983, 31, 253-259.	0.8	136
120	Stable methods for determining the surface impedance of an obstacle from low frequency far field data. Applicable Analysis, 1982, 14, 61-70.	0.6	1
121	Runge's Theorem and Far Field Patterns for the Impedance Boundary Value Problem in Acoustic Wave Propagation. SIAM Journal on Mathematical Analysis, 1982, 13, 970-977.	0.9	12
122	The three dimensional inverse scattering problem for acoustic waves. Journal of Differential Equations, 1982, 46, 46-58.	1.1	42
123	The Determination of the Surface Impedance of an Obstacle from Measurements of the Far Field Pattern. SIAM Journal on Applied Mathematics, 1981, 41, 8-15.	0.8	19
124	Stable methods for solving the inverse scattering problem for a cylinder. Proceedings of the Royal Society of Edinburgh Section A: Mathematics, 1981, 89, 181-188.	0.8	8
125	Schwarz reflection principles for solutions of parabolic equations. Proceedings of the American Mathematical Society, 1981, 82, 87-94.	0.4	1
126	The direct and inverse scattering problems for an arbitrary cylinder: Dirichlet boundary conditions. Proceedings of the Royal Society of Edinburgh Section A: Mathematics, 1980, 86, 29-42.	0.8	17



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127	Asymptotic behaviour of the fundamental solution to the equation of heat conduction in two temperatures. <i>Journal of Mathematical Analysis and Applications</i> , 1979, 69, 411-418.	0.5	21
128	The approximation of solutions to the backwards heat equation in a nonhomogeneous medium. <i>Journal of Mathematical Analysis and Applications</i> , 1979, 72, 418-429.	0.5	18
129	The inverse scattering problem for a cylinder. <i>Proceedings of the Royal Society of Edinburgh Section A: Mathematics</i> , 1979, 84, 135-143.	0.8	15
130	The exterior dirichlet problem for $\Delta$ . <i>Applicable Analysis</i> , 1978, 7, 207-212.	0.6	5
131	On reflection principles for parabolic equations in one space variable. <i>Proceedings of the Edinburgh Mathematical Society</i> , 1978, 21, 143-147.	0.2	1
132	The numerical solution of parabolic partial differential equations by the method of integral operators. <i>International Journal of Computer Mathematics</i> , 1977, 6, 229-239.	1.0	0
133	The scattering of acoustic waves by a spherically stratified inhomogeneous medium. <i>Proceedings of the Royal Society of Edinburgh Section A: Mathematics</i> , 1977, 76, 345-350.	0.8	5
134	A reflection principle for solutions to the Helmholtz equation and an application to the inverse scattering problem. <i>Glasgow Mathematical Journal</i> , 1977, 18, 125-130.	0.2	10
135	An inverse scattering problem for acoustic waves in a spherically stratified medium. <i>Proceedings of the Edinburgh Mathematical Society</i> , 1977, 20, 257-263.	0.2	1
136	The solution of initial-boundary value problems for parabolic equations by the method of integral operators. <i>Journal of Differential Equations</i> , 1977, 26, 181-190.	1.1	48
137	The approximation of solutions to initial boundary value problems for parabolic equations in one space variable. <i>Quarterly of Applied Mathematics</i> , 1976, 33, 377-386.	0.5	11
138	8. "Constructive Methods for Solving the Exterior Neumann Problem for the Reduced Wave Equation in a Spherically Symmetric Medium. <i>Proceedings of the Royal Society of Edinburgh Section A: Mathematics</i> , 1976, 75, 97-107.	0.8	10
139	21. "Runge's Theorem for Parabolic Equations in Two Space Variables. <i>Proceedings of the Royal Society of Edinburgh Section A: Mathematics</i> , 1975, 73, 307-315.	0.8	3
140	Integral operators for elliptic equations in three independent variables, ii. <i>Applicable Analysis</i> , 1975, 4, 283-295.	0.6	7
141	Complete Families of Solutions for Parabolic Equations with Analytic Coefficients. <i>SIAM Journal on Mathematical Analysis</i> , 1975, 6, 937-947.	0.9	7
142	Integral operators for parabolic equations and their application. <i>Lecture Notes in Mathematics</i> , 1974, , 95-111.	0.1	0
143	The inverse Stefan problem for the heat equation in two space variables. <i>Mathematika</i> , 1974, 21, 282-286.	0.3	14
144	Integral operators and reflection principles for parabolic equations in one space variable. <i>Journal of Differential Equations</i> , 1974, 15, 551-559.	1.1	20

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145	The Noncharacteristic Cauchy Problem for Parabolic Equations in One Space Variable. SIAM Journal on Mathematical Analysis, 1974, 5, 263-272.	0.9	7
146	Generalized reflection principles for parabolic equations in one space variable. Duke Mathematical Journal, 1974, 41, 547.	0.8	4
147	Integral operators and the first initial boundary value problem for pseudoparabolic equations with analytic coefficients. Journal of Differential Equations, 1973, 13, 506-522.	1.1	24
148	ON THE ANALYTIC THEORY OF PSEUDOPARABOLIC EQUATIONS. Quarterly Journal of Mathematics, 1972, 23, 179-192.	0.3	19
149	Rapidly Convergent Approximations to Dirichlet's Problem for Semilinear Elliptic Equations. Applicable Analysis, 1972, 2, 229-240.	0.6	6
150	Pseudoparabolic equations in one space variable. Journal of Differential Equations, 1972, 12, 559-565.	1.1	97
151	Integral representations of solutions to a class of fourth order elliptic equations in three independent variables. Mathematika, 1971, 18, 283-290.	0.3	0
152	Integral operators and complete families of solutions for $\Delta_{p+2} u = f$ . Archive for Rational Mechanics and Analysis, 1971, 43, 62-78.	1.1	5
153	ON THE INVERSE SCATTERING PROBLEM FOR AXIALLY SYMMETRIC SOLUTIONS OF THE HELMHOLTZ EQUATION. Quarterly Journal of Mathematics, 1971, 22, 125-130.	0.3	20