

# LIST OF PUBLICATIONS

José M. Carcione

February 12, 2019

## 1 Peer-reviewed publications

<http://www.lucabaradello.it/carcione/pubs.html>

1. Abecasis, S. M., and Carcione, J. M., 1979, Application of the classical semimicroscopic model to doubly even titanium isotopes, *Phys. Rev. C*, **19**, 1535-1543.
2. Carcione, J. M., 1984, Hacia una visión global del problema energético, *Energía 2001*, February issue, 20-25.
3. Carcione, J. M., 1984, Diagnósis energética en el sector industrial, *Energía 2001*, July issue, 48-52.
4. Carcione, J. M., and Elía, R. D., 1985, Application of Fibonacci technique to seismic section modeling, YPF Report.
5. Carcione, J. M., 1987, Wave propagation simulation in real media, Ph.D. Thesis, *University of Tel-Aviv*.
6. Carcione, J. M., Kosloff, D., and Kosloff, R., 1988, Wave propagation simulation in a linear viscoacoustic medium, *Geophys. J. Roy. Astr. Soc.*, **93**, 393-407. Erratum: 1988, **95**, 642.
7. Carcione, J. M., Kosloff, D., and Kosloff, R., 1988, Wave propagation simulation in a linear viscoelastic medium, *Geophys. J. Roy. Astr. Soc.*, **95**, 597-611.
8. Carcione, J. M., Kosloff, D., and Kosloff, R., 1988, Viscoacoustic wave propagation simulation in the earth, *Geophysics*, **53**, 769-777.
9. Carcione, J. M., Kosloff, D., and Kosloff, R., 1988, Wave propagation simulation in an anisotropic (transversely isotropic) medium, *Q. Jl. Mech. Appl. Math.*, **41**, 320-345.
10. Behle, A., Carcione, J. M., Freter, H., Koren, Z., Kosloff, D., Kümmer, B., and Tessmer, E., 1988, Numerical 3-D seismic modelling, *Hydrocarbons, source of energy*, Commission of the European Communities, Graham and Trotman Publishers, 46-56.
11. Carcione, J. M., 1990, Wave propagation in anisotropic linear viscoelastic media: theory and simulated wavefields, *Geophys. J. Int.*, **101**, 739-750. Erratum: 1992, **111**, 191.
12. Carcione, J. M., Kosloff, D., and Kosloff, R., 1990, Viscoacoustic wave propagation simulation in the earth, in *Numerical Modeling of Seismic Wave Propagation*, K. R. Kelly and K. J. Marfurt, Eds., Geophysics Reprint Series N<sup>o</sup> 13.
13. Tal-Ezer, H., Carcione, J. M., and Kosloff, D., 1990, An accurate and efficient scheme for wave propagation in linear viscoelastic media, *Geophysics*, **55**, 1366-1379.

14. Seriani, G., Carcione, J. M., and Kosloff, D., 1990, A vector and parallel code for the elastodynamic equation in 3-D anisotropic media, in *Supercomputing Tools for Science and Engineering*, Laforenza, D, and Perego, R. eds., Franco Angeli Ed., 109-118.
15. Carcione, J. M., 1991, Domain decomposition for wave propagation problems, *J. Sci. Comput.*, **6** (4), 453-472.
16. Carcione, J. M., Kosloff, D. and Behle, A., 1991, Long wave anisotropy in stratified media: a numerical test, *Geophysics*, **56**, 245-254.
17. Carcione, J. M., and Behle, A., 1991, Equations and numerical methods for linear wave propagation in anelastic media, IMACS 91: Proceedings of the 13th IMACS World Congress on Computation and Applied Mathematics: July 22-26, 1991, Trinity College, Dublin, Ireland, Volume 2, 906-911.
18. Carcione, J. M., 1992, Rayleigh waves in isotropic-viscoelastic media, *Geophys. J. Int.*, **108**, 453-464. Erratum: 1992, **111**, 191.
19. Carcione, J. M., 1992, Anisotropic Q and velocity dispersion of finely layered media, *Geophys. Prosp.*, **40**, 761-783.
20. Carcione, J. M., 1992, Modeling anelastic singular surface waves in the Earth, *Geophysics*, **57**, 781-792.
21. Carcione, J. M., and Carrion, P., 1992, 3-D radiation pattern of the drilling bit source in finely stratified media, *Geophys. Res. Letters*, **19** (17), 717-720.
22. Carcione, J. M., Kosloff, D., Behle, A., and Seriani, G., 1992, A spectral scheme for wave propagation simulation in 3-D elastic-anisotropic media, *Geophysics*, **57**, 1593-1607.
23. Casula, G. and Carcione, J. M., 1992, Generalized mechanical model analogies of linear viscoelastic behaviour, *Boll. Geofis. Teor. Appl.*, **34**, 235-256.
24. Seriani, G., Priolo, E., Carcione, J., and Padovani, E., 1992, High-order spectral element method for elastic wave modeling: High-order spectral element method for elastic wave modeling, in The 62nd Ann. Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, 1285-1288.
25. Carcione, J. M., 1993, Seismic modeling in viscoelastic media, *Geophysics*, **58**, 110-120.
26. Carcione, J. M., 1993, A 3-D time-domain wave equation for viscoacoustic saturated porous media, *Eur. J. Mech. A/Solids*, **12** (1), 53-71.
27. Carcione, J. M., and Cavallini, F., 1993, Energy balance and fundamental relations in anisotropic-viscoelastic media, *Wave Motion*, **18**, 11-20.
28. Carcione, J. M., and Wang, J. P., 1993, A Chebyshev collocation method for the elastodynamic equation in generalized coordinates, *Comput. Fluid Dynam. J.*, **2**, 269-290.
29. Carcione, J. M., 1994, Modeling elastic waves in the presence of a borehole and free surface, in The 64th Ann. Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, 747-750.
30. Carcione, J. M., 1994, Time-dependent boundary conditions for the 2-D linear anisotropic-viscoelastic wave equation, *Numer. Meth. Part. Diff. Equations*, **10**, 771-791.
31. Carcione, J. M., 1994, Boundary conditions for wave propagation problems, *Finite elements in analysis and design*, **16**, 317-327.

32. Carcione, J. M., 1994, Wavefronts in dissipative anisotropic media, *Geophysics*, **59**, 644-657. Erratum: see book (Carcione, 2007).
33. Carcione, J. M., 1994, The wave equation in generalized coordinates, *Geophysics*, **59**, 1911-1919.
34. Carcione, J. M., and Cavallini, F., 1994, Anisotropic-viscoelastic rheologies via eigenstrains, *Waves and Stability in Continuous Media*, S. Rionero and T. Ruggeri eds., World Scientific, 40-46.
35. Carcione, J. M., and Cavallini, F., 1994, A rheological model for anelastic anisotropic media with applications to seismic wave propagation, *Geophys. J. Int.*, **119**, 338-348.
36. Priolo, E., Carcione, J. M., and Seriani, G., 1994, Numerical simulation of interface waves by high-order spectral modeling techniques, *J. Acous. Soc. Am.*, **95**, 681-693.
37. Carcione, J. M., and Cavallini, F., 1994, A semi-analytical solution for the propagation of pure shear waves in dissipative monoclinic media, *Acoustics Letters*, **17**, 72-76.
38. Carcione, J. M., and Seriani, G., 1994, Torsional oscillations of anisotropic hollow circular cylinders, *Acoustics Letters*, **18**, 99-102.
39. Carcione, J. M., Böhm G., and Marchetti, A., 1994, Simulation of a CMP seismic section, *Journal of Seismic Exploration*, **3**, 381-396.
40. Carcione, J. M., and Tal-Ezer, H., 1994, Viscoelastic seismic modeling, *in* Modeling the Earth for oil exploration, K. Helbig, ed., 471-479.
41. Cavallini, F., and Carcione, J. M., 1994, Energy balance and inhomogeneous plane-wave analysis of a class of anisotropic viscoelastic constitutive laws, *Waves and Stability in Continuous Media*, S. Rionero and T. Ruggeri eds., World Scientific, 47-53.
42. Carcione, J. M., 1995, Constitutive model and wave equation for linear, viscoelastic, anisotropic media, *Geophysics*, **60**, 537-548.
43. Carcione, J. M., and Cavallini, F., 1995, Forbidden directions for inhomogeneous pure shear waves in dissipative anisotropic media, *Geophysics*, **60**, 522-530.
44. Carcione, J. M., and Cavallini, F., 1995, On the acoustic-electromagnetic analogy, *Wave Motion*, **21**, 149-162.
45. Carcione, J. M., and Cavallini, F., 1995, The generalized *SH* wave equation, *Geophysics*, **60**, 549-555.
46. Carcione, J. M., and Cavallini, F., 1995, Attenuation and quality factors surfaces in anisotropic-viscoelastic media, *Mech. Mater.*, **19**, 311-327.
47. Carcione, J. M., and Quiroga-Goode, G., 1995, Some aspects of the physics and numerical modeling of Biot compressional waves, *J. Comput. Acous.*, **3**, 261-280.
48. Carcione, J. M., and Seriani, G., 1995, Propagation of axially symmetric waves in infinitely long composite cylinder systems, *in* *Mathematical and Numerical Aspects of Wave Propagation*, SIAM, G. Cohen (ed.), 555-563.
49. Böhm, G., Carcione, J. M., and Vesnaver, A., 1996, Reflection tomography versus stacking velocity analysis, *J. Appl. Geophys.*, **35**, 1-13.

50. Cavallini, F. and Carcione, J. M., 1996, Reflection and transmission of anti-plane shear waves in anisotropic media, *Rendiconti del Circolo Matematico di Palermo*, Serie II, Suppl. 45, 91-100.
51. Carcione, J. M., 1996, A 2-D Chebyshev differential operator for the elastic wave equation, *Comput. Methods Appl. Mech. Engrg.*, **130**, 33-45.
52. Carcione, J. M., 1996, Plane-layered models for the analysis of wave propagation in reservoir environments, *Geophys. Prosp.*, **44**, 3-26.
53. Carcione, J. M., 1996, Ground penetrating radar: wave theory and numerical simulation in conducting anisotropic media, *Geophysics*, **61**, 1664-1677.
54. Carcione, J. M., 1996, Ground radar simulation for archaeological applications, *Geophys. Prosp.*, **44**, 871-888.
55. Carcione, J. M., 1996, Wave propagation in anisotropic, saturated porous media: plane wave theory and numerical simulation, *J. Acous. Soc. Am.*, **99**(5), 2655-2666.
56. Carcione, J. M., 1996, Ground-radar numerical modelling applied to engineering problems, *European Journal of Environmental and Engineering Geophysics*, **1**, 65-81.
57. Carcione, J. M., 1996, Elastodynamics of a non-ideal interface: Application to crack and fracture scattering, *J. Geophys. Res.*, **101**(b12), 28177-28188.
58. Carcione, J. M., and Quiroga-Goode, G., 1996, Full frequency range transient solution for compressional waves in a fluid-saturated viscoelastic porous medium, *Geophys. Prosp.*, **44**, 99-129.
59. Carcione, J. M., Quiroga-Goode, G., and Cavallini, F., 1996, Wavefronts in dissipative anisotropic media: comparison of the plane wave theory with numerical modeling, *Geophysics*, **61**, 857-861.
60. Carrion, P., Carcione, J. M., and Sampaio, E., 1996, Radiations patterns: a possibility for monitoring seismic sources, *Geophysics*, **61**, 282-287.
61. Carcione, J. M., 1997, Reflection and refraction of anti-plane shear waves at a plane boundary between viscoelastic anisotropic media, *Proc. R. Soc. Lond. A*, **453**, 919-942. Erratum: see book (Carcione, 2007).
62. Carcione, J. M., 1997, Reflection and transmission of  $qP$ - $qS$  plane waves at a plane boundary between viscoelastic transversely isotropic media, *Geophys. J. Int.*, **129**, 669-680.
63. Moczo, P., Bystrický, E., Kristek, J., Carcione, J. M., and Bouchon, M., 1997, Hybrid modelling of  $P - SV$  seismic motion at inhomogeneous viscoelastic topographic structures: *Bull. Seism. Soc. Am.*, **87**, 1305-1323.
64. Quiroga-Goode, G. and Carcione, J. M., 1997, Heterogeneous modelling behaviour at an interface in porous media, *Computational Geosciences*, **1**(2), 109-125.
65. Quiroga-Goode, G. and Carcione, J. M., 1997, Wave dynamics at an interface in porous media, *Boll. Geofis. Teor. Appl.*, **38**, 165-178.
66. Carcione, J. M., and Cavallini, F., 1997, Forbidden directions for TEM waves in anisotropic conducting media, *IEEE Trans. Antennas and Propagat.*, **45**, 133-139.

67. Ohanian, V., Snyder, T. M., and Carcione, J. M., 1997, Mesaverde and Green River Shale anisotropies by wavefront folds and interference patterns, in The 67th Ann. Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, 937-940.
68. Carcione, J. M., 1998, Scattering of elastic waves by a plane crack of finite width in a transversely isotropic medium, *Int. J. Numer. Anal. Methods Geomech.*, **22**, 263-275
69. Carcione, J. M., 1998, Viscoelastic effective rheologies for modeling wave propagation in porous media, *Geophys. Prosp.*, **46**, 249-270.
70. Carcione, J. M., 1998, Radiation patterns for GPR forward modeling, *Geophysics*, **63**, 424-430.
71. Carcione, J. M., Cavallini, F., and Helbig, K., 1998, Anisotropic attenuation and material symmetry, *Acustica*, **84**, 495-502.
72. Carcione, J. M., Helle, H. and Zhao T., 1998, The effects of attenuation and anisotropy on reflection amplitude versus offset, *Geophysics*, **63**, 1652-1658.
73. Carcione, J. M. and Seriani, G., 1998, Torsional waves in lossy cylinders, *J. Acous. Soc. Am.*, **103**(2), 760-766.
74. Carcione, J. M., and Seriani, G., 1998, Seismic velocities in permafrost, *Geophys. Prosp.*, **46**, 441-454.
75. Carcione, J. M., 1999, Discussion on: Propagation on torsional surfaces waves in viscoelastic medium, by Dey et al., *Int. J. Numer. Anal. Meth. Geomech.*, **23**, 275-276.
76. Carcione, J. M., 1999, On energy definition in electromagnetism: an analogy with viscoelasticity, *J. Acous. Soc. Am.*, **105**(2), 626-632.
77. Carcione, J. M., 1999, The effects of vector attenuation on AVO of off-shore reflections, *Geophysics*, **64**, 815-819.
78. Carcione, J. M., 1999, Staggered mesh for the anisotropic and viscoelastic wave equation, *Geophysics*, **64**, 1863-1866.
79. Carcione, J. M., and Gangi, A., 1999, Babinet's principle for elastic waves, *J. Acous. Soc. Am.*, **105**(3), 1485-1492.
80. Carcione, J. M. and Helle, H. B., 1999, Numerical solution of the poroviscoelastic wave equation on a staggered mesh, *J. Comput. Phys.*, **154**(2), 520-527.
81. Carcione, J. M., Lenzi, G., and Valle, S., 1999, GPR modelling by the Fourier method: improvement of the algorithm, *Geophys. Prosp.*, **47**, 1015-1029.
82. Carcione, J. M., and Seriani, G., 2000, Numerical simulation of wave propagation in frozen porous media, 5th International conference on mathematical and numerical aspects of wave propagation, Santiago de Compostela, Spain, 771-775.
83. Hanyga, A., and Carcione, J. M., 2000, Numerical solutions of a poro-acoustic wave equation with generalized fractional integral operators, 5th International conference on mathematical and numerical aspects of wave propagation, Santiago de Compostela, Spain, 163-167.
84. Carcione, J. M., Arntsen, B., and Cavallini, F., 2000, Simulation of ultrasonic waves in a natural sandstone, 5th International conference on mathematical and numerical aspects of wave propagation, Santiago de Compostela, Spain, 128-132.

85. Carcione, J. M., Padoan, G., and Cavallini, F., 2000, Synthetic seismograms of the sea-bottom under different streamers conditions, *Boll. Geof. Teor. Appl.*, **41**, 21-29.
86. Carcione, J. M., and Tinivella, U., 2000, Bottom simulating reflectors: seismic velocities and AVO effects, *Geophysics*, **65**, 54-67. Errata: 2001, **66**, 984.
87. Carcione, J. M., and Seriani, G., 2000, An electromagnetic modelling tool for the detection of hydrocarbons in the subsoil, *Geophys. Prosp.*, **48**, 231-256.
88. Carcione, J. M., and Schoenberg, M., 2000, 3-D ground-penetrating radar simulation and plane wave theory, *Geophysics*, **65**, 1527-1541.
89. Carcione, J. M., Gurevich, B. and Cavallini, F., 2000, A generalized Biot-Gassmann model for the acoustic properties of shaley sandstones, *Geophys. Prosp.*, **48**, 539-557.
90. Carcione, J. M., and Gangi, A., 2000, Non-equilibrium compaction and abnormal pore-fluid pressures: effects on seismic attributes, *Geophys. Prosp.*, **48**, 521-537.
91. Carcione, J. M., and Gangi, A., 2000, Gas generation and overpressure: effects on seismic attributes, *Geophysics*, **65**, 1769-1779.
92. Gurevich, B. and Carcione, J. M., 2000, Gassmann modeling of acoustic properties of sand/clay mixtures, *Pure and Applied Geophysics*, **157**, 811-827.
93. Carcione, J. M., Marcak, H., Seriani, G., and Padoan, G., 2000, GPR modeling study in a contaminated area of Krzywa airbase, *Geophysics*, **65**, 521-525.
94. Carcione, J. M., and Poletto, F., 2000, Sound velocity of drilling mud saturated with reservoir gas, *Geophysics*, **65**, 646-651.
95. Carcione, J. M., and Poletto, F., 2000, Simulation of stress waves in attenuating drill strings, including piezoelectric sources and sensors, *J. Acoust. Soc. Am.*, **108**(1), 53-64.
96. Carcione, J. M., 2000, A model for seismic velocity and attenuation in petroleum source rocks, *Geophysics*, **65**, 1080-1092.
97. Arntsen, B., and Carcione, J. M., 2000, A new insight into the reciprocity principle, *Geophysics*, **65**, 1604-1612. Discussion by A. T. de Hoop and Reply by the authors, **66**, 973-975.
98. Carcione, J. M., 2001, AVO effects of a hydrocarbon source-rock layer, *Geophysics*, **66**, 419-427.
99. Carcione, J. M., 2001, Amplitude variations with offset of pressure-seal reflections, *Geophysics*, **66**, 283-293.
100. Carcione, J. M., 2001, Energy balance and fundamental relations in dynamic anisotropic poro-viscoelasticity, *Proc. Roy. Soc. London A*, **457**, 331-348. Errata: 2002, **458**, 3089.
101. Tinivella, U., and Carcione, J. M., 2001, Estimation of gas-hydrate concentration and free-gas saturation from log and seismic data, *The Leading Edge*, **20**(2), 200-203.
102. Carcione, J. M., and Seriani, G., 2001, Wave simulation in frozen porous media, *J. Comput. Phys.*, **170**, 676-695.
103. Carcione, J. M., and Helbig, K., 2001, Wave polarization in transversely-isotropic and orthorhombic media: in Hood, J., Ed., *Advances in Anisotropy, Selected Theory, Modeling, and Case Studies*, Society of Exploration Geophysicists, Open File Publication **5**, 289-322.

104. Arntsen, B., and Carcione, J. M., 2001, Numerical simulation of the Biot slow wave in water-saturated Nivelsteiner sandstone, *Geophysics*, **66**, 890-896.
105. Zietek, J., Karczewski, J., Tomecka-Suchon, S., Carcione, J. M., Padoan, G., and Denis, C., 2001, Observations and results of GPR modelling of sinkholes in Upper Silesia (Poland), *Acta Geod. Geoph. Hung.*, **36**(4), 377-389.
106. Poletto, F., and Carcione, J. M., 2001, On the group velocity of guided waves in drill strings, *J. Acoust. Soc. Am.*, **109**(4), 1743-1746.
107. Carcione, J. M., and Cavallini, F., 2001, A semi-analytical solution for the propagation of electromagnetic waves in 3-D lossy orthotropic media, *Geophysics*, **66**, 1141-1148.
108. Carcione, J. M., and Cavallini, F., 2001, Absorbing layer via wave-equation splitting, *J. Comput. Acous.*, **9**, 1347-1354.
109. Carcione, J. M., Petronio, L., Poletto, F., Seriani, G., and Miranda, F., 2001, A 3D Elastic modelling code for seismic wave propagation and 3D SWD surveys, *Science and Supercomputing at CINECA*, 2001 Report, 318-324.
110. Carcione, J. M., and Tinivella, U., 2001, The seismic response to overpressure: a modeling methodology based on laboratory, well and seismic data, *Geophys. Prosp.*, **49**, 523-539.
111. Carcione, J. M., and Robinson, E., 2002, On the acoustic-electromagnetic analogy for the reflection-refraction problem, *Studia Geoph. et Geod.*, **46**, 321-345. (Special issue dedicated to V. Červený.)
112. Carcione, J. M., Cavallini, F., Mainardi, F., and Hanyga, A., 2002, Time-domain seismic modeling of constant  $Q$ -wave propagation using fractional derivatives, *Pure and Applied Geophysics*, **159**(7), 1719-1736.
113. Poletto, F., Carcione, J. M., Lovo, M., and Miranda, F., 2002, Acoustic velocity of SWD borehole guided waves, *Geophysics*, **67**, 921-927.
114. Carcione, J. M., and Poletto, F., 2002, A telegrapher equation for electric telemetering in drill strings, *IEEE Transactions On Geoscience and Remote Sensing*, **40**, 1047-1053.
115. Carcione, J. M., and Cavallini, F., 2002, Poisson's ratio at high pore pressure, *Geophys. Prosp.*, **50**, 97-106.
116. Carcione, J. M., and Helle, H. B., 2002, Rock physics of geopressure and prediction of abnormal pore fluid pressures using seismic data, *CSEG Recorder*, **27**(7), 8-32.
117. Ohanian, V., Snyder, T. M., and Carcione, J. M., 2002, Explicit imaging expressions for weak horizontal transverse isotropy, in The 72nd Ann. Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, 153-156.
118. Carcione, J. M., Herman, G., and ten Kroode, F. P. E., 2002, Seismic modeling, *Geophysics*, **67**, 1304-1325.
119. Carcione, J. M., Piñero Feliciangeli, L., and Zamparo, M., 2002, The exploding-reflector concept for ground penetrating radar modeling, *Annals of Geophysics*, **45**, 473-478.
120. Pham, N. H., Carcione, J. M., Helle, H. B., and Ursin, B., 2002, Wave velocities and attenuation of shaley sandstones as a function of pore pressure and partial saturation. *Geophys. Prosp.*, **50**, 615-627.

121. Carcione, J. M., Seriani, G., and Gei, D., 2003, Acoustic and electromagnetic properties of soils saturated with salt water and NAPL, *J. Appl. Geophys.*, **52**, 177-191.
122. Carcione, J. M., Helle, H. B., Pham, N. H., and Toverud, T., 2003, Pore pressure estimation from seismic reflection data, *Geophysics*, **68**, 1569-1579.
123. Ravazzoli, C. L., Santos, J. E., and Carcione, J. M., 2003, Acoustic and mechanical response of reservoir rocks under variable saturation and effective pressure, *J. Acoust. Soc. Am.*, **113**(4), 1801-1811.
124. Carcione, J. M., Finetti, I., and Gei, D., 2003, Seismic modeling study of the Earth's deep crust, *Geophysics*, **68**, 656-664.
125. Gei, D., and Carcione, J. M., 2003, Acoustic properties of sediments saturated with gas hydrate, free gas and water, *Geophys. Prosp.*, **51**, 141-157.
126. Carcione, J. M., Helbig, K., and Helle, H. B., 2003, Effects of pressure and saturating fluid on wave velocity and attenuation of anisotropic rocks, *Int. J. Rock Mech. Min. Sci.*, **40**, 389-403.
127. Carcione, J. M., and Poletto, F., 2003, Electric drill-string telemetry, *J. Comput. Phys.*, **186**, 596-609.
128. Carcione, J. M., and Gei, D., 2003, A seismic modeling study of a subglacial lake, *Geophys. Prosp.*, **51**, 501-515.
129. Carcione, J. M., Santos, J. E., Ravazzoli, C. L., and Helle, H. B., 2003, Wave simulation in partially frozen porous media with fractal freezing conditions, *J. Appl. Phys.*, **94**, 7839-7847.
130. Carcione, J. M., Helle, H. B., and Pham, N. H., 2003, White's model for wave propagation in partially saturated rocks: Comparison with poroelastic numerical experiments, *Geophysics*, **68**, 1389-1398.
131. Helle, H. B., Pham, N. H., and Carcione, J. M., 2003, Velocity and attenuation in partially saturated rocks: – Poroelastic numerical experiments, *Geophys. Prosp.*, **51**, 551-566.
132. Carcione, J. M., Cavallini, F., Santos, J. E., Ravazzoli, C. L., and Gauzellino, P. M., 2004, Wave propagation in partially-saturated porous media: Simulation of a second slow wave, *Wave Motion*, **39**, 227-240.
133. Baradello, L., Carcione, J. M., and Gei, D., 2004, Fast monostatic GPR modeling, *Geophysics*, **69**, 466-471.
134. Santos, J. E., Ravazzoli, C. L., Gauzellino, P. M., Carcione, J. M., and Cavallini, F., 2004, Simulation of waves in poro-viscoelastic rocks saturated by immiscible fluids. Numerical evidence of a second slow wave, *J. Comput. Acoustics*, **12**, 1-21.
135. Carcione, J. M., and Helle, H. B., 2004, On the physics and simulation of wave propagation at the ocean bottom, *Geophysics*, **69**, 825-839.
136. Carcione, J. M., and Gei, D., 2004, Gas hydrate concentration estimated from P- and S-wave velocities at the Mallik 2L-38 research well, Mackenzie Delta, Canada, *J. Appl. Geophys.*, **56**, 73-78.
137. Santos, J. E., Ravazzoli, C. L., and Carcione, J. M., 2004, A model for wave propagation in a composite solid matrix saturated by a single-phase fluid, *J. Acoust. Soc. Am.*, **115**(6), 2749-2760.



138. Carcione, J. M., Poletto, F., and Gei, D., 2004, 3-D wave simulation in anelastic media using the Kelvin-Voigt constitutive equation, *J. Comput. Phys.*, **196**, 282-297.
139. Chand, S., Minshull, T. A., Gei, D., and Carcione, J. M., 2004, Elastic velocity models for gas-hydrate bearing sediments - A comparison, *Geophys. J. Internat.*, **159**, 573-590.
140. Helle, H. B., Carcione, J. M., and Gangi, A. F., 2005, Pressure prognosis and mud-weight design when drilling in salt environments, VI Congreso de exploración y desarrollo de hidrocarburos, Mar del Plata, Argentina.
141. Carcione, J. M., Helle, H. B., Santos, J. E., and Ravazzoli, C. L., 2005, A constitutive equations and generalized Gassmann modulus for multi-mineral porous media, *Geophysics*, **70**, N17-N26.
142. de la Vega, M., Osella, A., Lascano, E., and Carcione, J. M., 2005, GPR and geo-electrical simulations of the Floridablanca archaeological site data, *Archaeological Prospection*, **12**, 19-30.
143. Carcione, J. M., Helle, H. B., Seriani, G., and Plasencia, M. P., 2005, On the simulation of seismograms in a viscoelastic Earth by pseudospectral methods, *Geophys. Internat.*, **44**, 123-142.
144. Carcione, J. M., Finetti, I., and Gei, D., 2005, Seismic modelling applied to CROP crustal section in the Adriatic Sea, in Atlases in Geoscience 1, CROP project, Deep seismic exploration of the central Mediterranean and Italy, I. R. Finetti (Ed.), 549-562.
145. Carcione, J. M., Gei, D., Rossi, G., and Madrussani, G., 2005, Estimation of gas-hydrate concentration and free-gas saturation at the Norwegian-Svalbard continental margin, *Geophys. Prosp.*, **53**, 803-810.
146. Santos, J. E., Ravazzoli, C. L., Gauzellino, P. M., and Carcione, J. M., 2005, Numerical simulation of ultrasonic waves in reservoir rocks with patchy saturation and fractal petrophysical properties, *Computational Geosciences*, **9**, 1-27.
147. Carcione, J. M., Picotti, S., Gei, D., and Rossi, G., 2006, Physics and seismic modeling for monitoring CO<sub>2</sub> storage, *Pure and Applied Geophysics*, **163**, 175-207.
148. Carcione, J. M., 2006, A spectral numerical method for electromagnetic diffusion, *Geophysics*, **71**, I1-I9.
149. Carcione, J. M., 2006, Vector attenuation: elliptical polarization, raypaths and the Rayleigh-window effect, *Geophys. Prosp.*, **54**, 399-407.
150. Carcione, J. M., and Picotti, S., 2006, P-wave seismic attenuation by slow-wave diffusion. Effects of inhomogeneous rock properties, *Geophysics*, **71**, O1-O8.
151. Carcione, J. M., Helle, H. B., and Gangi, A. F., 2006, Theory of borehole stability when drilling through salt formations, *Geophysics*, **71**, F31-F47.
152. Ohanian, V., Snyder, T. M., and Carcione, J. M., 2006, Weak elastic anisotropy by perturbation theory, *Geophysics*, **71**, D45-D58.
153. Picotti, S., and Carcione, J. M., 2006, Estimating seismic attenuation (Q) in the presence of random noise, *Journal of Seismic Exploration*, **15**, 165-181.
154. Persoglia, S., Carcione, J. M., Rossi, G. and Gei, D., 2006, 4-D seismics, gas-hydrate detection and overpressure prediction as a combined methodology for application to CO<sub>2</sub> sequestration, *Nato Science Series: IV: Earth and Environmental Sciences Advances in the Geological Storage of Carbon Dioxide*, **25**, 315-323.

155. Carcione, J. M., Gei, D., Botelho, M. A. B., Osella, A., and de la Vega, M., 2006, Fresnel reflection coefficients for GPR-AVO analysis and detection of seawater and NAPL contaminants, *Near Surface Geophysics*, **4**, 253-263.
156. Santos, J. E., Rubino, J. G., and Carcione, J. M., 2006, Numerical simulation of seismic attenuation due to wave-induced fluid flow, *Mecánica Computacional*, **25**, 2179-2192.
157. Carcione, J. M., and Gei, D., 2006, Chapter on “El Método Sísmico”, in *Arqueo-geofísica: Una metodología interdisciplinaria para explorar el pasado*, Fundación de Historia Natural.
158. Carcione, J. M., Landrø, M., Gangi, A. F., and Cavallini, F., 2007, Determining the dilation factor in 4D monitoring of compacting reservoirs by rock-physics models, *Geophys. Prosp.*, **55**, 793-804.
159. Quintal, B., Schmalholz, S. M., Podladchikov, Y. Y., and Carcione, J. M., 2007, Seismic low-frequency anomalies in multiple reflections from thinly-layered poroelastic reservoirs, in *The 77th Ann. Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts*, 1690-1695.
160. Carcione, J. M., Campanella, O., and Santos, J. E., 2007, A poroelastic model for wave propagation in partially frozen orange juice, *J. Food Engineering*, **80**, 11-17.
161. Picotti, S., and Carcione, J. M., Rubino, J. G., Santos, J. E., 2007, P-wave seismic attenuation by slow-wave diffusion: Numerical experiments in partially saturated rocks, *Geophysics*, **72**, N11-N21.
162. Rossi, G., Gei, D., Böhm, G., Madrussani, G., and Carcione, J. M., 2007, Attenuation tomography: An application to gas-hydrate and free-gas detection, *Geophys. Prosp.*, **55**, 655-669.
163. Carcione, J. M., Ursin, B., and Nordskog, J. I., 2007, Cross-property relations between electrical conductivity and the seismic velocity of rocks, *Geophysics*, **72**, E193-E204.
164. Sidler, R., and Carcione, J. M., R., 2007, Wave reflection at an anelastic transversely isotropic ocean bottom, *Geophysics*, **72**, SM139-SM146.
165. Rubino, J. G., Santos, J. E., Picotti, S., and Carcione, J. M., 2007, Simulation of upscaling effects due to wave-induced fluid flow in Biot media using the finite-element method, *J. Appl. Geophys.*, **62**, 193-203.
166. Rossi G., Gei D., Picotti S., and Carcione, J. M., 2008, CO<sub>2</sub> storage at the Aztbach-Schwanenstadt gas field: a seismic monitoring feasibility study, *First Break*, **26**, 45-51.
167. G. K. Westbrook, S. Chand, G. Rossi, C. Longa, S. Bünz, A. Camerlenghi, J. M. Carcione, S. Dean, J-P Foucher, E. Flueh, D. Gei, R. R. Haacke, G. Madrussani, J. Mienert, T.A. Minshull, H. Nouzé, S Peacock, T. J. Reston, M. Vannestee, M. Zillmer, 2008, Estimation of gas-hydrate concentration from multi-component seismic data at sites on the continental margins of NW Svalbard and the Storegga region of Norway, *J. Petroleum Geology*, doi:10.1016/j.marpetgeo.2008.02.003.
168. Carcione, J. M., and Poletto, F., 2008, Synthetic logs of multipole sources in boreholes based on the Kelvin-Voigt stress-strain relation, *Geophys. J. Internat.*, **174**, 808-814.
169. Sidler, R., Carcione, J. M., and Holliger, K., 2008, On the evaluation of the plane-wave reflection coefficients in anelastic media, *Geophys. J. Internat.*, **175**, 94-102.

170. Baradello, L., and Carcione, J. M., 2008, Optimal seismic-data acquisition in very shallow waters. Surveys in the Venice lagoon, *Geophysics*, **73**, Q59-Q63.
171. Carcione, J. M., and Helbig, K., 2008, Elastic medium equivalent to Fresnel's double-refraction crystal, *J. Acoust. Soc. Am.*, **124**(4), 2053-2060.
172. Carcione, J. M., Poletto, F., and Farina, B., 2008, Simulation of axis-symmetric seismic waves in fluid-filled boreholes in the presence of a drill string, *Computational Geosciences*, **12**, 593-604.
173. Carcione, J. M., and Kozák, J., 2008, The Messina-Reggio earthquake of december 28, 1908, *Stud. Geophys. Geod.*, **52**, 661-672.
174. Carcione, J. M., 2009, Theory and modeling of constant- $Q$  P- and S-waves using fractional time derivatives, *Geophysics*, **74**, T1-T11.
175. Carcione, J. M., and Gei, D., 2009, Simulation of ground motion and synthetic seismograms. The 1908 Messina Earthquake, *Environmental Seismotology*, **2**(1), 1-15.
176. Helbig, K., and Carcione, J. M., 2009, Anomalous polarization in anisotropic media, *European J. of Mechanics, A/Solids.*, **28**, 704-711.
177. Carcione, J. M., and Gei, D., 2009, Theory and numerical simulation of fluid-pressure diffusion in anisotropic porous media, *Geophysics*, **74**, N31-N39.
178. Picotti, S., Carcione, J. M., Rubino, G., Santos, J. E., and Cavallini, F., 2010, A viscoelastic representation of wave attenuation in porous media, *Computer & Geosciences*, **36**, 44-53.
179. Carcione, J. M., Gei, D., and Treitel, S., 2010, The velocity of energy through a dissipative medium, *Geophysics*, **75**, T37-T47.
180. Kosloff, D., and Carcione, J. M., 2010, 2-D simulation of Rayleigh waves with staggered, sine/cosine transforms and variable grid spacing, *Geophysics*, **75**, T133-T140.
181. Picotti, S., Carcione, J. M., Santos, J. E., and Gei, D., 2010, Q-anisotropy in finely-layered media, *Geophys. Res. Lett.*, **37**, L06302, doi:10.1029/2009GL042046. Correction: **38**, L10307, doi:10.1029/2011GL047613.
182. Carcione, J. M., Morency, C., and Santos, J. E., 2010, Computational poroelasticity – A review, *Geophysics*, **75**, A229-A243.
183. Sidler, R., Carcione, J. M., and Holliger, K., 2010, Simulation of surface waves in porous media, *Geophys. J. Internat.*, **183**, 820-832.
184. Carcione, J. M., 2010, A generalization of the Fourier pseudospectral method, *Geophysics*, **75**, 53-56.
185. Carcione, J. M., Gei, D., Rossi, G., and Tinivella, U., 2010, Wave theory, simulation and determination of gas-hydrate content in sediments. Chapter 25, in *Geophysical characterization of Gas hydrate*. Edited by M. Reidel, E.C. Willoughby and S. Chopra. SEG Geophysical Developments Series No. 14, pp. 349-372.
186. Carcione, J. M., 2010, Simulation of electromagnetic diffusion in anisotropic media, *Progress In Electromagnetics Research B (PIER B)*, **26**, 425-450.
187. Caputo, M., and Carcione, J. M., 2011, Hysteresis cycles and fatigue criteria using anelastic models based on fractional derivatives, *Rheologica Acta*, **50**, 107-115.

188. Caputo, M., and Carcione, J. M., 2011, Wave simulation in dissipative media described by distributed-order fractional time derivatives, *Journal of Vibration and Control*, **17**, 1121-1130.
189. Santos, J. E., Carcione, J. M., and Picotti, S., 2011 Viscoelastic-stiffness tensor of anisotropic media from oscillatory numerical experiments, *Computer Methods in Applied Mechanics and Engineering*, **200**, 896-904.
190. Ba, J., Carcione, J. M., and Nie, J. X., 2011, Biot-Rayleigh theory of wave propagation in double-porosity media, *J. Geophys. Res.*, **116**, B06202, doi:10.1029/2010JB008185.
191. Pinna, G., Carcione, J. M., and Poletto, F., 2011 Kerogen to oil conversion in source rocks. Pore-pressure build-up and effects on seismic velocities, *Journal of Applied Geophysics*, **74**, 229-235.
192. Carcione, J. M., Helle, H. B., and Avseth, P., 2011, Source-rock seismic-velocity models: Gassmann versus Backus, *Geophysics*, **76**, N37-N45.
193. Carcione, J. M., 2011, Electromagnetic diffusion in anisotropic media, *Radio Sci.*, doi:10.1029/2010RS004402.
194. Favretto-Cristini, N., Komatitsch, D., Carcione, and J. M., Cavallini, F., 2011, Elastic surface waves in crystals. Part 1: Review of the physics, *Ultrasonics*, **516**, 653-660.
195. Komatitsch, D., Carcione, J. M., Cavallini, F., and Favretto-Cristini, N., 2011, Elastic surface waves in crystals. Part 2: Cross-check of two full-wave numerical modeling methods, *Ultrasonics*, **51**, 878-889.
196. Caputo, M., Carcione, J. M., and Cavallini, F., 2011, Wave simulation in biological media based on the Kelvin-Voigt fractional-derivative stress-strain relation, *Ultrasound in Med. & Biol.*, **37**, 996-1004.
197. Carcione, J. M., and Gurevich, B., 2011, Differential form and numerical implementation of Biot's poroelasticity equations with squirt dissipation, *Geophysics*, **76**, N55-N64.
198. Carcione, J. M., Santos, J. E., and Picotti, S., 2011, Anisotropic poroelasticity and wave-induced fluid flow. Harmonic finite-element simulations, *Geophys. J. Internat.*, **186**, 1245-1254.
199. Carcione, J. M., and Picotti, S., 2012, Reflection and transmission coefficients of a fracture in transversely isotropic media, *Stud. Geophys. Geod.*, **56**, 307-322.
200. Ba, J., Carcione, J. M., Cao et al., 2012, Velocity dispersion and attenuation of P waves in partially-saturated rocks: Wave propagation equations in double-porosity medium, *Chinese J. Geophys.*, **55**, 219-231 (in Chinese). issn 0001-5733.01.021.
201. Carcione, J. M., Santos, J. E., and Picotti, S., 2012, Fracture-induced anisotropic attenuation *Rock Mech. Rock Eng*, **45**, 929-942.
202. Picotti, S., Carcione, J. M., and Santos, J. E., 2012, Oscillatory numerical experiments in finely layered anisotropic viscoelastic media, *J. Computers and Geosciences*, **43**, 83-89.
203. Carcione, J. M., Picotti, S., Cavallini, F., and Santos, J. E., 2012, Numerical test of Schoenberg-Muir averaging theory, *Geophysics*, **77**, 27-35.
204. Carcione, J. M., Gei, D., Picotti, S., and Michelini, A., 2012, Cross-hole electromagnetic and seismic modeling for CO<sub>2</sub> detection and monitoring in a saline aquifer, *Journal of Petroleum Science and Engineering*, **100**, 162-172.

205. Picotti, S., Carcione, J. M., Gei, D., Rossi, G., and Santos, J. E., 2012 Seismic modeling to monitor CO2 geological storage: The Atzbach-Schwanenstadt gas field, *J. Geophys. Res.*, **117**, B06103, 18 PP., doi:10.1029/2011JB008540.
206. Santos, J. E., Picotti, S., and Carcione, J. M., 2012, Evaluation of the stiffness tensor of a fractured medium with harmonic experiments, *Comput. Methods Appl. Mech. Engrg.*, **247-248**, 130-145
207. Carcione, J. M., Picotti, S., and Santos, J. E., 2012, Numerical experiments of fracture-induced velocity and attenuation anisotropy, *Geophys. J. Internat.*, **191**, 1179-1191.
208. Carcione, J. M., and Kosloff, D., 2013, Representation of matched-layer kernels with viscoelastic mechanical models, *Int. J. Numer. Anal. Mod.*, **10**, 221-232.
209. Ba, J., Carcione, J. M., Cao, H., Yao, F., and Du, Q., 2013, Poro-acoustoelasticity of fluid-saturated rocks, *Geophys. Prosp.*, **61**, 599-612.
210. Caputo, M., and Carcione, J. M., 2013, A memory model of sedimentation in water reservoirs, *Journal of Hydrology*, **476**,426-432.
211. Carcione, J. M., Poletto, F., and Pinna, G., 2013 Simulation of flexural waves in drill pipes including the effects of the gravitational field, *Wave Motion*, **50**, 310-325.
212. Carcione, J. M., Gurevich, B., and Santos, J. E., and Picotti, S., 2013, Angular and frequency dependent wave velocity and attenuation in fractured porous media, *Pure and Applied Geophysics*, **170**,1673-1683.
213. Carcione, J. M., and Poletto, F., 2013, Seismic rheological model and reflection coefficients of the brittle-ductile transition, *Pure and Applied Geophysics*, **170**, 2021-2035.
214. Sidler, R., Carcione, J. M., and Holliger, K., 2013, A pseudo-spectral method for the simulation of poro-elastic seismic wave propagation in 2D polar coordinates using domain decomposition, *J. Comput. Phys.*, **235**, 846-864.
215. Carcione, J. M., de la Vega, M., Gei, D., Osella, A., Picotti, S., Tassone, A., and Poscolieri, M., 2013, Seismic characterization of the Quaternary sediments at Llançanelo-Lake Area, *Journal of Seismic Exploration*, **22**, 1-18.
216. Ba, J., Cao, H., Carcione, J. M., Tang, G., Yan, X.-F., Sun, W.-T., and Nie, J.-X., 2013, Multiscale rock-physics template for gas detection in carbonate reservoirs, *J. Appl. Geophys.*, **93**, 77-82.
217. Picotti, S., Grünhut, V., Osella, A., Gei, D., and Carcione, J. M., 2013, Sensitivity analysis from single-well ERT simulations to image CO2 migrations along wellbores, *The Leading Edge*, May Issue, 504-512
218. Zhu, T., Carcione, J. M., and Harris, J. M., 2013 Approximating constant-Q seismic propagation in the time domain, *Geophys. Prosp.*. DOI: 10.1111/1365-2478.12044.
219. Poletto, F., Carcione, J. M., and Pinna, G., 2013, Flexural waves in drill-string tubulars with variable loads, *Geophys. Prosp.*, **61**, 955-972.
220. Carcione, J. M., Sanchez-Sesma, F. J., Luzón, F., and Perez Gavilán, J. J., 2013, Theory and simulation of time-fractional fluid diffusion in porous media, *J. Phys. A: Math. Theor.*, **46** 345501, doi:10.1088/1751-8113/46/34/345501
221. Qadrouh, A. N., Carcione, J. M., Botelho, M. A. B., Harith, Z. Z. T., and Salim, A. M., 2014, On optimal NMO and generalised Dix equations for velocity determination and depth conversion, *J. Appl. Geophys.*, **101**, 136-141.

222. Zhu, T., and Carcione, J. M., 2014, Theory and modeling of constant-Q P- and S-waves using fractional spatial derivatives *Geophys. J. Internat.*, **196**, 1787-1795.
223. Gauzellino, P., Carcione, J. M., Santos, J. E., and Picotti, S., 2014, A rheological equation for anisotropic-anelastic media and simulation of synthetic seismograms, *Wave Motion*, **51**, 743-757.
224. Carcione, J. M., Picotti, S., Santos, J. E., Qadrouh, A. N., and Almalki, H. S., 2014, Numerical simulation of two-phase fluid flow, *J. Petrol. Explor. Prod. Technol.*, DOI 10.1007/s13202-014-0109-y.
225. Sidler, R., Carcione, J. M., and Holliger, K., 2013, A pseudospectral method for the simulation of 3-D ultrasonic and seismic waves in heterogeneous poroelastic borehole environments, *Geophys. J. Internat.*, **196**, 1134-1151.
226. Carcione, J. M., Grünhut, V., and Osella, A., 2014, Mathematical analogies in physics. Thin-layer wave theory, *Annals of Geophysics*, **57**, 1-10, G0186; doi:10.4401/ag-6324.
227. Martinez Corredor, R., Santos, J. E., Gauzellino, P., and Carcione, J. M., 2014, Reflection and transmission coefficients of a single layer in poroelastic media, *J. Acoust Soc. Am.*, **135**, 3151-3162.
228. Santos, J. E., Martinez Corredor, R., and Carcione, J. M., 2014, Seismic velocity and Q anisotropy in fractured poroelastic material, *International Journal of Rock Mechanics and Mining Sciences*, **70**, 212-218.
229. Carcione, J. M., Cavallini, F., Gei, D. and Botelho, M. A. B., 2015, On the earthquake-source numerical implementation in the seismic wave equation, *Journal of Earthquake Engineering*, **19**, 48-59.
230. Sun, W., Ba, J., Müller, T. M., Carcione, J. M., Cao, H., 2014, Comparison of P-wave attenuation models due to wave-induced flow, *Geophys. Prosp.*, DOI: 10.1111/1365-2478.12196.
231. Carcione, J. M., Poletto, F., Farina, B., and Craglietto, A., 2014, Simulation of seismic waves at the brittle-ductile transition based on the Burgers model, *Solid Earth*, **5**, 1001-1010.
232. Yu, H., Ba, J., Carcione, J. M., Li, J.-S., Tang, G., Zhang, X.-Y., He, X.-Z., and Ouyang, H., 2014, Rock physics modeling of heterogeneous carbonate reservoirs: Porosity estimation and hydrocarbon detection, *Applied Geophysics*, **11**, 9-22.
233. Santos, J. E., and Carcione, J. M., 2015, Finite-element harmonic experiments to model fractured induced anisotropy in poroelastic media, *Comput. Methods Appl. Mech. Engrg.*, **283**, 1189-1213.
234. Caputo, M., Carcione, J. M., and Botelho, M. A. B., 2015, Modeling extreme-event precursors with the fractional diffusion equation, *Fractional Calculus and Applied Analysis*, **18**, 208-222,
235. Qadrouh, A., Carcione, J. M., Salim, A. M., and Harith, Z. Z. T., 2015, Attenuation effects on the seismic response of a bottom-simulating reflector, *Journal of Natural Gas Science and Engineering*, **24**, 510-517.
236. Macias, L. A., Savioli, G. B., Santos, J. E., Carcione, J. M., and Gei, D., 2015, Analysis of capillary pressure effect on the seismic response of a CO<sub>2</sub>-storage site applying multiphase flow and wave propagation simulators, *International Journal of Greenhouse Gas Control*, **39**, 335-348.

237. Picotti, S., Vuan, A., Carcione, J. M., Horgan, H. J., and Anandakrishnan, S., 2015, Anisotropy and crystalline fabric of Whillans Ice Stream (West Antarctica) inferred from multicomponent seismic data, *J. Geophys. Res. Solid Earth*, **120**, doi:10.1002/2014JB011591.
238. Carcione, J. M., Almalki, H. S. and Qadrouh, A. N., 2016, Geophone-ground coupling with flat bases, *Geophys. Prosp.*, **64**, 255-267.
239. Böhm, G., Carcione, J. M., Gei, D., Michelini, A., and Picotti, S., 2015, Cross-well electromagnetic and seismic tomography for CO<sub>2</sub> detection and monitoring in a saline aquifer, *Journal of Petroleum Science and Engineering*, **133**, 245-257.
240. Ba, J., Carcione, J. M., and Sun, W., 2015, Seismic attenuation due to heterogeneities of rock fabric and fluid distribution, *Geophys. J. Internat.*, **202**, 1843-1847.
241. Carcione, J. M., Da Col, F., Currenti, G., and Cantucci, B., 2015 Modeling techniques to study CO<sub>2</sub>-injection induced micro-seismicity, *International Journal of Greenhouse Gas Control*, **42**, 246-257.
242. Carcione, J. M., and Avseth, P., 2015, Rock-physics templates for clay-rich source rocks, *Geophysics*, **80**, D481-D500.
243. Avseth, P., and Carcione, J. M., 2015 Rock-Physics analysis of clay-rich source rocks on the Norwegian shelf, *The Leading Edge*, November issue, 936-943.
244. Sun, W., Ba, J., and Carcione, J. M., 2016, Theory of wave propagation in partially saturated double-porosity rocks: a triple-layer patchy mode, *Geophys. J. Internat.*, **205**, 22-37.
245. Carcione, J. M., and Mainardi, F., 2017, On the relation between sources and initial conditions for the wave and diffusion equations, *Computers and Mathematics with Applications*, <http://dx.doi.org/10.1016/j.camwa.2016.04.019>.
246. Carcione, J. M., and Gei, D., 2016, Numerical investigation of the seismic detectability of carbonate thin beds in the Boom Clay formation, *Geophys. J. Internat.*, **206**, 63-84.
247. Qadrouh, A., Carcione, J. M., Salim, A. M., and Harith, Z. Z. T., 2016, Seismic spectrograms of an anelastic layer with different source-receivers configurations, *Arabian Journal of Geosciences*, doi:10.1007/s12517-016-2429-3, **9**-413.
248. Carcione, J. M., and Ursin, B., 2016 On Fermat principle and Snell law in lossy anisotropic media, *Geophysics*, **3**, T107-T116.
249. Zhu T., Carcione, J. M., and Botelho, M. A. B., 2016, Reverse-time migration of surface-radar and SH-seismic data including the effects of wave loss, *Geophysics*, **81**(4), H21-H32.
250. Carcione, J. M., Zhu, T., Picotti, S., and Gei, D., 2016, Imaging septaria with Q-compensation by reverse-time migration, *Netherlands Journal of Geosciences*. DOI: <http://dx.doi.org/10.1017/njg.2016.2>.
251. Carcione, J. M., Picotti, S., Francese, R., Giorgi, M., and Pettenati, F., 2017, Effect of soil and bedrock anelasticity on the S-wave amplification function, *Geophys. J. Internat.*, **208**(1), 424-431.
252. Carcione, J. M., Poletto, F., Farina, B., and Craglietto, A., 2017, The Gassmann-Burgers model to simulate seismic waves at the Earth crust and mantle, *Pure and Applied Geophysics*, **174**, 849-863.

253. Savioli, G. B., Santos, J. E., Carcione, J. M., and Gei, D., 2016, A model for CO<sub>2</sub> storage and seismic monitoring combining multiphase fluid flow and wave propagation simulators. The Sleipner-field case., *Computational Geosciences*, DOI 10.1007/s10596-016-9607-y.
254. Martinez Corredor, R. M., Santos, J. E., Gauzellino, P. M., and Carcione, J. M., 2016, Validation of the boundary conditions to model the seismic response of fractures, *Geophys. Prosp.*, **64**, 1149-1165.
255. Ba, J., Zhao, J., Carcione, J. M., and Huang, X., 2016, Compressional wave dispersion due to rock matrix stiffening by clay squirt flow, *Geophys. Res. Lett.*, **43**, 6186-6195.
256. Picotti, S., Francese, R., Giorgi, M., Pettenati, F., and Carcione, J. M., 2017, Estimation of glacier thicknesses and basal properties using the horizontal-to-vertical component spectral ratio (HVSr) technique from passive seismic data, *J. of Glaciology*, doi: 10.1017/jog.2016.135.
257. Carcione, J. M., and Poletto, F., 2017, SH-TM mathematical analogy for the two-layer case. A magnetotellurics example, *Advanced Electromagnetics*, **6**, 29-35.
258. Farina, B, Poletto, F, and Carcione, J. M., 2017, Synthetic waveforms of axial motion in a borehole with drill string, *J. Acoust. Soc. Am.*, **141**(2):828. doi: 10.1121/1.4976043.
259. Santos, J. E., Martinez Corredor, R., and Carcione, J. M., 2017 Determination of a transversely isotropic medium equivalent to a fractured fluid-saturated poroelastic medium. A finite element approach, *SIAM J. Sci. Comput.*, **39**, B244-B271.
260. Onnis, L., and Carcione, J. M., 2017, A seismic ray-tracing method based on Fibonacci search, *Annals of Geophysics*, **60**, doi: 10.4401/ag-7128
261. Ursin, B., Carcione, J. M., and Gei, D., 2017, A physical solution for plane SH waves in anelastic media, *Geophys. J. Internat.*, **209**(2), 661-671.
262. Cavallini, F., Carcione, J. M., Vidal de Ventós, D., and Engell-Sørensen, L., 2017, Low-frequency dispersion and attenuation in anisotropic partially saturated rocks, *Geophys. J. Internat.*, **209**(3), 1572-1584.
263. Ba, J., Xu, W., Fu, L.-Y., Carcione, J. M., and Zhang, L., 2017, Rock anelasticity due to patchy-saturation and fabric heterogeneity: A double double-porosity model of wave propagation *J. Geophys. Res. Solid Earth*, **122**, 1949-1976.
264. Picotti, S. and Carcione, J. M., 2017 Numerical simulation of wave-induced fluid flow seismic attenuation based on the Cole-Cole model, *J. Acous. Soc. Am.*, <http://dx.doi.org/10.1121/1.4990965>.
265. Qadrouh, A. N., Carcione, J. M., Ba, J., and Gei, D., 2017, Backus and Wyllie averages for attenuation, *Pure and Applied Geophysics*, <http://rdcu.be/v8ju>.
266. Carcione, J. M., and Poletto, F., and Farina, B., 2018, The Burgers/squirt-flow seismic model of the crust and mantle, *Physics of the Earth and Planetary Interiors*, **274**, 14-22.
267. Carcione, J. M., and Currenti, G., Johann, L., and Shapiro, S., 2018, Modeling fluid-injection induced microseismicity in shales, *J. of Geophys. and Engr.*, **15**(1), 234-248.
268. Carcione, J. M., Qadrouh, A. N., Perroud, H., Gei, D., Ba, J., and Picotti, S., 2018, Seismic attenuation, NMO stretch and low-frequency shadows underlying BSR events, *Geophys. Prosp.*, **66**, 857-871.



269. Carcione, J. M., Poletto, F., Farina, B., and Bellezza, C., 2018, 3D seismic modeling in geothermal reservoirs with a distribution of steam patch sizes, permeabilities and saturations, including ductility of the rock frame, *Physics of the Earth and Planetary Interiors*, **279**, 67-78.
270. Carcione, J. M., Bagaini, C., Ba, J., Wang, E., and Vesnaver, A., 2018, Waves at fluid-solid interfaces: Explicit versus implicit formulation of the boundary condition, *Geophys. J. Internat.*, 215, 37-48,
271. Poletto, F., Farina, B., and Carcione, J. M., 2018, Sensitivity of seismic properties to temperature variations in a geothermal reservoir, *Geothermics*, **76**, 149-163.
272. Lin, R., Vesnaver, A., Böhm, G., and Carcione, J. M., Broadband Q factor imaging by seismic tomography and instantaneous frequency, *Geophys. J. Internat.*, **214**, 672-686.
273. Picotti, S., Carcione, J. M., and Ba, J., 2018, Rock-physics templates for seismic  $Q$ , *Geophysics*, **84**(1), MR13–MR23.
274. Carcione, J. M., Wang, Z., Ling, W., Salusti, E., Ba, J., and Fu, L.-Y., Wave simulation in linear thermoelastic media, *Geophysics*, <https://doi.org/10.1190/geo2018-0448.1>
275. Shukla, K., Carcione, J. M., Jaiswal, P., Santos, J. E., and Ba, J., 2018, Effect of capillary pressure on seismic velocities and attenuation, *J. of Porous Media*, DOI:10.1615/JPorMedia.2018021864: 1-28.
276. Onnis, L. E., Osella, A., and Carcione, J. M., 2018, Retrieving shallow shear-wave velocity profiles from 2D seismic-reflection data with severely aliased surface waves, *J. Appl. Geophysics*, <https://doi.org/10.1016/j.jappgeo.2018.11.014>
277. Huang, G.-J., Ba, J., Du, Q., and Carcione, J. M., 2019, Simultaneous inversion for velocity and microseismic sources in layered anisotropic media, *J. Petr. Science and Eng.*, 173, 1453-1463.
278. Zhang, L., Ba, J., Fu, L., Carcione, J. M., and Cao, C., 2019, Estimation of pore microstructure by using the static and dynamic moduli, *International Journal of Rock Mechanics and Mining Sciences*, **24**, 24-30.
279. Shukla, K., Hesthaven, J. S., Carcione, J. M., Ye, R., de la Puente, J. and Jaiswal, P., 2019, A nodal Discontinuous Galerkin finite-element method for the poroelastic wave equation, *Computational Geosciences*, <https://doi.org/10.1007/s10596-019-9809-1>
280. Shukla, K., Carcione, J. M., Pestana, R. C., Jaiswal, P., and Özdenvar, T., 2019, Modeling the wave propagation in viscoacoustic media: An efficient spectral approach in time and space domain, *Computers and Geosciences*, <https://doi.org/10.1016/j.cageo.2019.01.022>.
281. Sun, W., Xiong, F., Ba, J. and Carcione, J. M., 2018, Effects of ellipsoidal heterogeneities on wave propagation in partially-saturated double-porosity rocks, *Geophysics*, **83**, WC71-WC81.

## 2 Books

1. Ba, J., Carcione, J. M., Du, O., Zhao, H., and Müller, T. M., 2015, Seismic exploration of hydrocarbons in heterogeneous reservoirs, New theories, methods and applications, Chapter 2: Contribution to “Wave propagation and attenuation in heterogeneous reservoir rocks”; Chapter 4: “Fine layering and fractures: Effective seismic anisotropy”, Elsevier Science.

2. Carcione, J. M., 2001, *Wave Fields in Real Media. Theory and numerical simulation of wave propagation in anisotropic, anelastic and porous media*, Pergamon Press.
3. Carcione, J. M., 2007, *Wave Fields in Real Media. Theory and numerical simulation of wave propagation in anisotropic, anelastic, porous and electromagnetic media*, Elsevier. (Second edition, extended and revised).
4. Carcione, J. M., 2014, *Wave Fields in Real Media. Theory and numerical simulation of wave propagation in anisotropic, anelastic, porous and electromagnetic media*, Elsevier. (Third edition, extended and revised).
5. Carcione, J. M., and Gei, D., 2006, Chapter on “El Método Sísmico”, *in* *Arqueogeofísica: Una metodología interdisciplinaria para explorar el pasado*, Fundación de Historia Natural.
6. Carcione, J. M., Gei, D., Rossi, G., and Tinivella, U., 2010, Wave theory, simulation and determination of gas-hydrate content in sediments. Chapter 25, *in* *Geophysical characterization of Gas hydrate*. Edited by M. Reidel, E.C. Willoughby and S. Chopra. SEG Geophysical Developments Series No. 14, pp. 349-372.