# PUBLICATIONS OF DANIELE ANDREUCCI

[1] Daniele Andreucci. Continuation of the solution of a free boundary problem in cylindrical symmetry. *Meccanica*, 19:91–97, 1984. Pitagora, Bologna.

[2] Daniele Andreucci and Zheng Zhong Ding. Existence of the solution for the oxygen diffusion consumption problem in a cylindrical domain. *Control and Cybernetics*, 13:39–57, 1984. PWN Polish Scientific Publ., Varsavia (Polonia).

[3] Daniele Andreucci. Esistenza di soluzioni locali e dipendenza continua dai dati per un problema a frontiera libera in simmetria cilindrica. *Bollettino U.M.I. Suppl. Fisica Matematica*, 5:61–69, 1986. Zanichelli, Bologna.

[4] Daniele Andreucci and Riccardo Ricci. A free boundary problem arising from sorption of solvents in glassy polymers. *Quarterly of Applied Mathematics*, 44:649–657, 1987. American Math. Soc., Providence RI, U.S.A.

[5] Daniele Andreucci. Regioni mushy in problemi di cambiamento di fase. *Tesi di Dottorato*, 1988. Firenze.

[6] Daniele Andreucci. Existence and uniqueness of solutions to a concentrated capacity problem with change of phase. *European Journal of Applied Mathematics*, 1:339–351, 1990. Cambridge Univ. press, Cambridge (Gran Bretagna).

[7] Daniele Andreucci and Emmanuele DiBenedetto. A new approach to initial traces in nonlinear filtration. *Annales Institut H. Poincaré Analyse non Linéaire*, 7:305–334, 1990.

[8] Daniele Andreucci. $L_{loc}^\infty$-estimates for local solutions of degenerate parabolic equations. *SIAM Journal on Mathematical Analysis*, 22:138–145, 1991. Philadelphia PE (U.S.A.).

[9] Daniele Andreucci and Emmanuele DiBenedetto. On the Cauchy problem and initial traces for a class of evolution equations with strongly nonlinear sources. *Annali Sc. Normale Sup. Pisa*, 18:363–441, 1991.

[10] Daniele Andreucci, Antonio Fasano, and Mario Primicerio. On a mathematical model for the crystallization of polymers. In H.J. Wacker and W. Zulehner, editors, *Proceedings of the 4th E.C.M.I. Meeting*, pages 3–16. Kluwer Acad., 1991. Dordrecht (Paesi Bassi).

[11] Daniele Andreucci. New results on the Cauchy problem for parabolic systems and equations with strongly nonlinear sources. *Manuscripta Mathematica*, 77:127–159, 1992. Springer, Berlino (Germania).

[12] Daniele Andreucci and Emmanuele DiBenedetto. Weak solutions of equations of the type of non stationary filtration. *Nonlinear Analysis TMA*, 19:29–41, 1992. Elsevier, Oxford (Gran Bretagna).

[13] Daniele Andreucci, Antonio Fasano, and Mario Primicerio. On the occurrence of singularities in axisymmetrical problems of Hele-Shaw type. In *Proceedings Conference Novosibirsk on Continuum Mechanics, International Series Numerical Mathematics*, volume 106, pages 23–38. Birkhauser Verlag, 1992. Basel (Svizzera).

[14] Daniele Andreucci. Behaviour of mushy regions under the action of a volumetric heat source. *Mathematical Methods in the Applied Sciences*, 16:35–47, 1993. Wiley-Teubner, Stoccarda (Germania).

[15] Daniele Andreucci, Lea Borrelli, Vincenzo Capasso, Peng Li, and Mario Primicerio. Polymer crystallization kinetics: The effect of impingement. *Math. Engng in Industry*, 4:249–263, 1993. VSP, Zeist (Paesi Bassi).

[16] Daniele Andreucci and Marianne Korten. Initial traces of solutions to a one-phase Stefan problem in an infinite strip. *Revista Matemática Iberoamericana*, 9:315–332, 1993. Graficas Lormo, Madrid (Spagna).

[17] Daniele Andreucci, Antonio Fasano, Maurizio Paolini, Mario Primicerio, and Claudio Verdi. Numerical simulation of polymer crystallization. *Mathematical Models and Methods in Applied Sciences*, 4:135–145, 1994. Singapore.

[18] Daniele Andreucci, Antonio Fasano, and Mario Primicerio. The supercooled Stefan problem in radial symmetry. *Ricerche di Matematica (supplement)*, 41:21–37, 1994. Nuova Grafica P6, Roma.

[19] Daniele Andreucci and Roberto Gianni. Classical solutions to a multidimensional free boundary problem arising in combustion theory. *Communications in Partial Differential Equations*, 19:803–826, 1994. Monticello NY (U.S.A.).

[20] Daniele Andreucci, Monica Bianchini, and Aldo Pasquali. Identification of parameters in polymer crystallization. *Applied Numerical Mathematics*, 17:191–211, 1995. Elsevier.

[21] Daniele Andreucci and Claudio Verdi. Existence, uniqueness, and error estimates for a model of polymer crystallization. *Advances in Mathematical Sciences and Applications*, 5:391–409, 1995.

[22] Daniele Andreucci, Antonio Fasano, Roberto Gianni, Mario Primicerio, and Riccardo Ricci. Diffusion driven crystallization in polymers. In *Proceedings of the Free Boundary Problems Conference, Zakopane*, volume 363 of *Res. Notes in Math.*, pages 359–367. Longman, 1996.

[23] Daniele Andreucci, Antonio Fasano, Mario Primicerio, and Riccardo Ricci. Mathematical problems in polymer crystallization. *Surveys Math. Ind.*, 6:7–20, 1996. Springer Vienna (Austria).

[24] Daniele Andreucci, Antonio Fasano, and Riccardo Ricci. A continuous model for the heterogeneous Ziegler-Natta polymerization. *Quaderni del Dipartimento di Matematica Università di Milano*, 29, 1996.

[25] Daniele Andreucci and Roberto Gianni. Global existence and blow up in a problem with non local dynamical boundary conditions. *Advances in Differential Equations*, 1:729–752, 1996.

[26] Daniele Andreucci. Degenerate parabolic equations with initial data measures. *Transactions American Mathematical Society*, 349:3911–3923, 1997. American Mathematical Society.

[27] Daniele Andreucci, Antonio Fasano, and Riccardo Ricci. Modello matematico di replica nel caso limite di distribuzione continua di centri attivi. In *Meccanismi di accrescimento di poliolefine su catalizzatori Ziegler-Natta, Simposio Montell 96, Montell Polyolefins, Centro Ricerche "G. Natta"*, pages 155–174, 1997.

[28] Daniele Andreucci, Antonio Fasano, and Riccardo Ricci. On the growth of a polymer layer around a catalytic particle: a free boundary problem. *Nonlinear Differential Equations and Applications*, 4:511–520, 1997. Springer.

[29] Daniele Andreucci, Miguel Herrero, and Juan J.L. Velazquez. Liouville theorems and blow up behaviour in semilinear reaction diffusion systems. *Annales Anal. Non Linéaire Inst. H. Poincaré*, 14:1–53, 1997. Elsevier Parigi (Francia).

[30] Daniele Andreucci and Anatoli F. Tedeev. Optimal bounds and blow up phenomena for parabolic problems in narrowing domains. *Proceedings Royal Soc. Edinburgh*, 128A:1163–1180, 1998. RSE Scotland Foundation, Edinburgh (UK).

[31] Daniele Andreucci, Antonio Fasano, and Riccardo Ricci. A continuous model for Ziegler-Natta polymerization. In *Variations of domain and free-boundary problems in solid mechanics (Paris, 1997)*, volume 66 of *Solid Mech. Appl.*, pages 219–226. Kluwer Acad. Publ., Dordrecht, 1999.

[32] Daniele Andreucci and Anatoli F. Tedeev. A Fujita type result for a degenerate Neumann problem in domains with non compact boundary. *J. Math. Analysis and Appl.*, 231:543–567, 1999. Elsevier.

[33] Daniele Andreucci, Giovanni Caruso, and Emmanuele DiBenedetto. Fingering in a Hele-Shaw cell as an obstacle-like problem. *Indiana University Mathematics Journal*, 49:1287–1321, 2000.

[34] Daniele Andreucci, Antonio Fasano, and Riccardo Ricci. Existence of solutions for a continuous multigrain model for polymerization. *Mathematical Models and Methods in Applied Sciences*, 10:1263–1276, 2000.

[35] Daniele Andreucci and Riccardo Ricci. Mathematical problems in the Ziegler-Natta polymerization process. In *Complex flows in industrial processes*, Model. Simul. Sci. Eng. Technol., pages 215–238. Birkhäuser Boston, Boston, MA, 2000.

[36] Daniele Andreucci and Anatoli F. Tedeev. Sharp estimates and finite speed of propagation for a Neumann problem in domains narrowing at infinity. *Advances Diff. Eqs.*, 5:833–860, 2000. Khayyam Publ., Athens Ohio (U.S.A.).

[37] Daniele Andreucci, Rita Cirmi, Salvatore Leonardi, and Anatoli F. Tedeev. Large time behavior of solutions to the Neumann problem for a quasilinear second order degenerate parabolic equation in domains with noncompact boundary. *Journal of Differential Equations*, 174:253–288, 2001. Elsevier.

[38] Daniele Andreucci, Miguel Herrero, and Juan J.L. Velazquez. The classical one-phase Stefan problem: a catalogue of interface behaviours. *Surveys on Mathematics for Industry*, 9:247–337, 2001. Springer Vienna (Austria).

[39] Daniele Andreucci and Anatoli F. Tedeev. Finite speed of propagation for the thin-film equation and other higher order parabolic equations with general nonlinearity. *Interfaces and Free Boundaries*, 3:233–264, 2001. European Mathematical Society.

[40] Daniele Andreucci, Paolo Bisegna, and Emmanuele DiBenedetto. Homogenization and concentrated capacity in reticular almost disconnected structures. *Comptes Rendus Mathematique*, 335:329–332, 2002.

[41] Micol Amar, Daniele Andreucci, Paolo Bisegna, and Roberto Gianni. Evolution and memory effects in the homogenization limit for electrical conduction in biological tissues: the 1-d case. In *Proceedings of the 16th AIMETA Congress of Theoretical and Applied Mechanics*, 2003.

[42] Micol Amar, Daniele Andreucci, Paolo Bisegna, and Roberto Gianni. Homogenization limit for electrical conduction in biological tissues in the radio-frequency range. *Comptes Rendus Mecanique*, 331:503–508, 2003. Elsevier.

[43] Daniele Andreucci, Paolo Bisegna, Giovanni Caruso, Emmanuele DiBenedetto, and Heidi Hamm. Mathematical model of the spatio-temporal dynamics of second messengers in visual transduction. *Biophysical Journal*, 85:1358–1376, 2003. The Biophysical Society.

[44] Daniele Andreucci, Paolo Bisegna, and Emmanuele DiBenedetto. Homogenization and concentrated capacity for the heat equation with non–linear variational data in reticular almost disconnected structures and applications to visual transduction. *Annali di Matematica Pura e Applicata*, 182:375–407, 2003. Springer.

[45] Daniele Andreucci, Giovanni Caruso, and Emmanuele DiBenedetto. Ill–posed Hele–Shaw flows. In P. Colli, C. Verdi, and A. Visintin, editors, *Free Boundary Problems, Theory and Applications*, volume 147, pages 27–51. Birkhäuser, 2003. Springer.

[46] Micol Amar, Daniele Andreucci, Paolo Bisegna, and Roberto Gianni. An elliptic equation with history. *C. R. Acad. Sci. Paris, Ser. I*, 338:595–598, 2004. Elsevier.

[47] Micol Amar, Daniele Andreucci, Paolo Bisegna, and Roberto Gianni. Evolution and memory effects in the homogenization limit for electrical conduction in biological tissues. *Mathematical Models and Methods in Applied Sciences*, 14:1261–1295, 2004. World Scientific.

[48] Daniele Andreucci, Miguel Herrero, and Juan J.L. Velazquez. On the growth of filamentary structures in planar media. *Mathematical Methods in the Applied Sciences*, 27:1935–1968, 2004. Wiley.

[49] Daniele Andreucci, Anatoli F. Tedeev, and Maura Ughi. The Cauchy problem for degenerate parabolic equations with source and damping. *Ukrainian Mathematical Bulletin*, 1:1–23, 2004.

[50] Micol Amar, Daniele Andreucci, Paolo Bisegna, and Roberto Gianni. Existence and uniqueness for an elliptic problem with evolution arising in electrodynamics. *Nonlinear Analysis Real World Applications*, 6:367–380, 2005. Elsevier.

[51] Daniele Andreucci, Paolo Bisegna, and Emmanuele DiBenedetto. Some mathematical problems in visual transduction. In *Trends in Partial Differential Equations of Mathematical Physics. Selected papers of the international conference held on the occasion of the 70th birthday of V. A. Solonnikov, bidos, Portugal, June 7–10, 2003*, volume 61 of *Progress in Nonlinear Differential Equations and Their Applications*, pages 65–80. Birkhäuser, 2005.

[52] Daniele Andreucci and Anatoli F. Tedeev. Universal bounds at the blow-up time for nonlinear parabolic equations. *Advances in Differential Equations*, 10:89–120, 2005. Khayyam Publ., Athens Ohio (U.S.A.).

[53] Lixin Shen, Daniele Andreucci, Heidi Hamm, and Emmanuele DiBenedetto. Fluctuations of the single photon response in visual transduction. In *18th International Conference on Noise*

*and Fluctuations; ICNF 2005*, volume 780 of *AIP Conference Proceedings*, pages 553–556. AIP, 2005.

[54] Micol Amar, Daniele Andreucci, Paolo Bisegna, and Roberto Gianni. On a hierarchy of models for electrical conduction in biological tissues. *Mathematical Methods in the Applied Sciences*, 29:767–787, 2006.

[55] Daniele Andreucci, Paolo Bisegna, and Emmanuele DiBenedetto. Homogenization and concentration of capacity in the rod outer segment with incisures. *Applicable Analysis*, 85:303–331, 2006.

[56] Giovanni Caruso, Paolo Bisegna, Lixin Shen, Daniele Andreucci, Heidi Hamm, and Emmanuele DiBenedetto. Modeling the role of incisures in vertebrate phototransduction. *Biophysical Journal*, 91:1192–1212, 2006. The Biophysical Society.

[57] Micol Amar, Daniele Andreucci, Paolo Bisegna, and Roberto Gianni. Application of homogenization techniques to the electrical conduction in biological tissues. *Proceedings in Applied Mathematics and Mechanics*, 7:2010013–2010014, 2007.

[58] Daniele Andreucci and Anatoli F. Tedeev. Large time behaviour for degenerate parabolic equations with convection. *Asymptotic Analysis*, 60:227–247, 2008. IOS Press.

[59] Paolo Bisegna, Giovanni Caruso, Daniele Andreucci, Lixin Shen, Vsevolod V. Gurevich, Heidi Hamm, and Emmanuele DiBenedetto. Diffusion of the second messengers in the cytoplasm acts as a variability suppressor of the single photon response in vertebrate phototransduction. *Biophysical Journal*, 94:3363–3383, 2008. The Biophysical Society.

[60] Micol Amar, Daniele Andreucci, Paolo Bisegna, and Roberto Gianni. Exponential asymptotic stability for an elliptic equation with memory arising in electrical conduction in biological tissues. *European Journal of Applied Mathematics*, 20:431–459, 2009.

[61] Micol Amar, Daniele Andreucci, Paolo Bisegna, and Roberto Gianni. Stability and memory effects in a homogenized model governing the electrical conduction in biological tissues. *Journal of Mechanics of Materials and Structures*, 4:211–223, 2009.

[62] Micol Amar, Daniele Andreucci, Paolo Bisegna, and Roberto Gianni. Homogenization limit and asymptotic decay for electrical conduction in biological tissues in the high radiofrequency range. *Communications on Pure and Applied Analysis*, 9:1131–1160, 2010.

[63] Giovanni Caruso, Paolo Bisegna, Leonardo Lenoci, Daniele Andreucci, Vsevolod V. Gurevich, Heidi E. Hamm, and Emmanuele DiBenedetto. Kinetics of rhodopsin deactivation and its role in regulating recovery and reproducibility of rod photoresponse. *PLoS Comput. Biol.*, 6(12):e1001031, 15, 2010. Supplementary material available online.

[64] Lixin Shen, Giovanni Caruso, Paolo Bisegna, Daniele Andreucci, Vsevolod V. Gurevich, Heidi Hamm, and Emmanuele DiBenedetto. Dynamics of mouse rod phototransduction and its sensitivity to variation of key parameters. *IET Systems Biology*, 4:12–32, 2010.

[65] Daniele Andreucci, Dario Bellaveglia, Emilio N. M. Cirillo, and Silvia Marconi. Monte carlo study of gating and selection in potassium channels. *Phys. Rev. E*, 84(2):021920, Aug 2011.

[66] Giovanni Caruso, Paolo Bisegna, Daniele Andreucci, Leonardo Lenoci, Vsevolod V. Gurevich, Heidi E. Hamm, and Emmanuele DiBenedetto. Identification of key factors that reduce the variability of the single photon response. *Proceedings of the National Academy of Sciences*, 108(19):7804–7807, 2011.

[67] Daniele Andreucci and Dario Bellaveglia. Permeability of interfaces with alternating pores in parabolic problems. *Asymptotic Analysis*, 79:189–227, 2012.

[68] Daniele Andreucci, Alberto Maria Bersani, Guido Dell'Acqua, Enrico Bersani, Claudio De Lazzari, Marco Ledda, and Antonella Lisi. A reaction-diffusion numerical model to predict cardiac tissues regeneration via stem cell therapy. In *Proceedings of the MASCOT11-IMACS/ISGG Workshop*, volume 17 of *IMACS Series in Computational and Applied Mathematics*, 2012.

[69] Micol Amar, Daniele Andreucci, Paolo Bisegna, and Roberto Gianni. A hierarchy of models for the electrical conduction in biological tissues via two-scale convergence: the nonlinear case. *Differential Integral Equations*, 26(9-10):885–912, 2013.

[70] Daniele Andreucci, Dario Bellaveglia, Emilio N. M. Cirillo, and Silvia Marconi. Flux through a time–periodic gate: Monte carlo test of a homogenization result. In *Proceedings of the 3rd International Conference on Simulation and Modeling Methodologies, Technologies and Applications*, pages 626–635. SciTePress, 2013.

[71] Daniele Andreucci and Kazuhiro Ishige. Local quasi-concavity of the solutions of the heat equation with a nonnegative potential. *Annali di Matematica Pura e Applicata*, 192:329–348, 2013.

[72] Daniele Andreucci, Dario Bellaveglia, Emilio N. M. Cirillo, and Silvia Marconi. Effect of intracellular diffusion on currentvoltage curves in potassium channels. *Discrete and Continuous Dynamical Systems B*, 19:1837–1853, 2014.

[73] Daniele Andreucci, Dario Bellaveglia, and Emilio Nicola Maria Cirillo. A model for enhanced and selective transport through biological membranes with alternating pores. *Math. Biosci.*, 257:42–49, 2014.

[74] Daniele Andreucci and Anatoli F. Tedeev. The Cauchy-Dirichlet problem for the porous media equation in cone-like domains. *SIAM Journal on Mathematical Analysis*, 46:1427–1455, 2014.

[75] Daniele Andreucci and Anatoli F. Tedeev. Optimal decay rate for degenerate parabolic equations on noncompact manifolds. *Methods Appl. Anal.*, 22(4):359–376, 2015.

[76] M. Amar, D. Andreucci, and R. Gianni. Exponential decay for a nonlinear model for electrical conduction in biological tissues. *Nonlinear Anal.*, 131:206–228, 2016.

[77] Micol Amar, Daniele Andreucci, and Roberto Gianni. Asymptotic decay under nonlinear and noncoercive dissipative effects for electrical conduction in biological tissues. *NoDEA Nonlinear Differential Equations Appl.*, 23(4):Art. 48, 24, 2016.

[78] Micol Amar, Daniele Andreucci, and Dario Bellaveglia. Homogenization of an alternating Robin-Neumann boundary condition via time-periodic unfolding. *Nonlinear Anal.*, 153:56–77, 2017.

[79] Micol Amar, Daniele Andreucci, and Dario Bellaveglia. The time-periodic unfolding operator and applications to parabolic homogenization. *Atti Accad. Naz. Lincei Rend. Lincei Mat. Appl.*, 28(4):663–700, 2017. MR3729583.

[80] Daniele Andreucci and Anatoli F. Tedeev. Asymptotic behavior for the filtration equation in domains with noncompact boundary. *Comm. Partial Differential Equations*, 42(3):347–365, 2017.

[81] Daniele Andreucci and Anatoli F. Tedeev. Large time behavior for the porous medium equation with convection. *Meccanica*, 52(13):3255–3260, 2017. MR3709966.