

MEDIOS HETEROGÉNEOS DE ALTO CONTRASTE: HOMOGENEIZACIÓN Y VIBRACIONES. ASPECTOS MATEMÁTICOS (MTM2013-44883-P) MINECO

Responsable: María Eugenia Pérez Martínez

Equipo de investigación: Miguel Lobo Hidalgo, María Eugenia Pérez Martínez, Delfina Gómez Gandarillas

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E. Difusión de los resultados del proyecto	
<i>Relacione únicamente los resultados derivados de este proyecto.</i>	
E1. Publicaciones en revistas indexadas directamente relacionadas con los resultados del proyecto.	
1.	D. Gómez, M. Lobo, M.E. Pérez, A.V. Podolskiy and T.A. Shaposhnikova, Homogenization for the p-Laplace operator and nonlinear Robin boundary conditions in perforated media along manifolds, Doklady Mathematics, Vol. 89, No. 1, pp. 11-15, 2014. (traducido del ruso Doklady Akademii Nauk, Vol. 454, No. 1, pp. 18-22, 2014).
2.	M.E. Pérez, T.A. Shaposhnikova and M.N. Zubova, A homogenization problem in a domain perforated by tiny isoperimetric holes with nonlinear Robin type boundary conditions. Doklady Mathematics, 2014, Vol. 90, No. 1, pp. 489-494 (traducido del ruso en Doklady Akademii Nauk, Vol. 457, No. 5, pp. 520-525, 2014).
3.	D. Gómez, M. Lobo, M.E. Pérez, T.A. Shaposhnikova and M. Zubova, On critical parameters in homogenization of perforated domains by thin tubes with nonlinear flux and related spectral problems, Mathematical Methods in Applied Sciences, Vol. 38, pp. 2606-2629, 2015.
4.	D. Gómez, M.E. Pérez, A.V. Podolskiy and T.A. Shaposhnikova, Homogenization for the p-Laplace operator in perforated media with nonlinear restrictions on the boundary of the perforations: a critical case, Doklady Mathematics, Vol. 92, No. 1, pp. 433-438, 2015. (traducido del ruso Doklady Akademii Nauk, Vol. 463, No. 3, pp. 255-260, 2015).
5.	A. Brillard, D. Gómez, M. Lobo, M.E. Pérez and T.A. Shaposhnikova, Boundary homogenization in perforated domains for adsorption problems with an advection term, Applicable Analysis, Vol. 95, No. 7, 1517-1533, 2016.
6.	D. Gómez, M. Lobo, M.E. Pérez, A.V. Podolskiy and T.A. Shaposhnikova, Homogenization of a variational inequality for the p-Laplacian in perforated media with nonlinear restrictions for the flux on the boundary of isoperimetric perforations: p equal to the dimension of the space, Doklady Mathematics, Vol. 93, No. 2, pp. 140-144, 2016. (traducido del ruso Doklady Akademii Nauk, Vol. 467, No. 1, pp. 1822-2016, 2016)
7.	S.A. Nazarov, M.E. Pérez and J. Taskinen Localization effect for Dirichlet eigenfunctions in thin non-smooth domains. Trans. Amer. Math. Soc., Vol. 368, No. 7, pp. 4787-4829, 2016
8.	F.L. Bakharev and M.E. Pérez, Spectral gaps for the Dirichlet-Laplacian in a 3-D waveguide periodically perturbed by a family of concentrated masses, Mathematische Nachrichten, Vol. 291, pp. 556-575, 2018.
9.	D. Gómez, S.A. Nazarov and M.E. Pérez, Homogenization of Winkler-Steklov spectral conditions in three-dimensional linear elasticity, Zeitschrift für angewandte Mathematik und Physik ZAMP, Vol. 69, artículo 35, 23 pp., 2018.
10.	S.A. Nazarov and M.E. Pérez, On multi-scale asymptotic structure of eigenfunctions in a boundary value problem with concentrated masses near the boundary, Revista Matemática Complutense, Vol. 31, No. 1, pp. 1-62, 2018.
11.	D. Gómez, M. Lobo, M.E. Pérez, A.V. Podolskiy and T.A. Shaposhnikova, Unilateral problems for the p-Laplace operator in perforated media involving large parameters. ESAIM: Control, Optimisation and Calculus of Variations (ESAIM: COCV), publicado online junio 2018, 44 pp, DOI: https://doi.org/10.1051/cocv/2017026
12.	D. Gómez, M. Lobo, M.E. Pérez and E. Sanchez-Palencia, Homogenization in perforated domains: a Stokes grill and an adsorption process, Applicable Analysis, publicado online octubre 2017, 27 pp. https://doi.org/10.1080/00036811.2017.1395863

13.	D. Gómez, M.E. Pérez, A.V. Podolskiy and T.A. Shaposhnikova, Homogenization of variational inequalities for the p -Laplace operator in perforated media along manifolds. Applied Mathematics and Optimization, publicado online Noviembre 2017, 19 pp. DOI: 10.1007/s00245-017-9453-x
14.	D. Gómez, M. Lobo and M.E. Pérez, Asymptotics for models of non-stationary diffusion in domains with a surface distribution of obstacles, sometido abril 2018 M2AS
15.	A. Gaudiello, D. Gómez and M.E. Pérez, Asymptotic analysis of the high frequencies for the Laplace operator in a thin T-like shaped structure, sometido septiembre 2018,
16.	A. Gaudiello and K. Hamdache, A reduced model for the polarization in a ferroelectric thin wire, Nonlinear Differential Equations and Applications NoDEA, Vol. 22, pp. 1883-1896, 2015. Factor impacto 2015: 0,797, posición: 130/254, Q3 in Mathematics, Applied.
17.	A. Gaudiello, G. Panasenko and A. Piatnitski, Asymptotic analysis and domain decomposition for a biharmonic problem in a thin multi-structure, Communications in Contemporary Mathematics, Vol. 18, No. 5, 1550057 (27 pages), 2016.
18.	L. Carbone, K.Chacouche and A. Gaudiello, Fin junction of ferroelectric thin films, Advances in Calculus of Variations, publicado online 2017, 31pp. https://doi.org/10.1515/acv-2016-0047
19.	A. Gaudiello and O. Guibé, Homogenization of an evolution problem with $L \log L$ data in a domain with oscillating boundary, Annali di Matematica, Pura ed Applicata Vol. 197, pp. 153–169, 2018.

E2. Otras publicaciones científico-técnicas directamente relacionadas con los resultados del proyecto.

1.	M.E. Pérez. Prólogo y edición del libro: Paseo dialéctico por las Ciencia. Editorial de la Universidad de Cantabria, 2015, 486 p. ISBN: 978-84-8102-746-4 (de divulgación científica, traducido del francés Promenade dialectique dans les Sciences, E.Sánchez-Palencia, Hermann, 2012)
2.	Stationary waves and approximations. Trabajo de Fin de Master de S. Navazo Estevan, UC, Octubre 2018. Dirección: D. Gómez, M.E.Pérez

E3. Publicaciones en libros/capítulos de libros

Indique autores, título, referencia de la publicación, año...*

1.	D. Gómez, M. Lobo, M.E. Pérez, T.A.Shaposhnikova and M. Zubova Correcting terms for perforated media by thin tubes with nonlinear flux and large adsorption parameters, in: Integral Methods in Science and Engineering. Theoretical and Computational advances, Birkhauser, Springer, pp. 267-289, 2015, ISBN 978-3-319-16727-5.
2.	D. Gómez, M.E. Pérez, A.V. Podolskii and T.A. Shaposhnikova, On homogenization of nonlinear Robin type boundary conditions for the n -Laplacian in n -dimensional perforated domains, in: Integral Methods in Science and Engineering, Vol. 1, Birkhauser, Springer, pp. 119-138, 2017, ISBN 978-3-319-59383-8, ISBN 978-3-319-59384-5 (eBook).