

**PERTURBACIONES ESPECTRALES: VIBRACIONES EN MULTIESTRUCTURAS Y HOMOGENEIZACIÓN, Y PROBLEMAS SENSITIVOS (MTM2009-12628) MINISTERIO DE ASUNTOS ECONOMICOS Y TRANSFORMACION DIGITAL**

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Fecha: 01/01/2010-31/05/2014

<b>E. Difusión de los resultados del proyecto</b>	
<i>Relacione únicamente los resultados derivados de este proyecto.</i>	
<b>E1. Publicaciones en revistas indexadas directamente relacionadas con los resultados del proyecto.</b>	
1.	<b>M. Lobo, E. Pérez.</b> Long time approximations for solutions of wave equations associated with Steklov spectral homogenization problems. <i>Mathematical Methods in the Applied Sciences</i> . N.33, 2010, p. 1356-1371
2.	<b>E. Pérez.</b> Long time approximations for solutions of evolution problems from quasimodes: perturbation problems. <i>Mathematica Balkanica (N.S.)</i> , Vol. 25, No 1-2, 2011, p. 95-130
3.	<b>D. Gómez, S. Nazarov, E. Pérez.</b> Spectral stiff problems in domains surrounded by thin stiff and heavy bands: local effects for eigenfunctions. <i>Networks and Heterogeneous Media</i> , Vol. 6, No. 1, p. 1-36, 2011
4.	<b>M. Lobo, E. Pérez, T.A. Shaposhnikova, V.V. Sukharev.</b> Averaging of boundary-value problem in domain perforated along (n-1) - dimensional manifold with nonlinear third type boundary conditions on the boundary of cavities. <i>Doklady Mathematics</i> , Vol. 83, No. 1, 34—38, 2011. (Traducido de <i>Doklady Akademii Nauk</i> , Vol. 436, No. 2, 163—167)
5.	<b>D. Gómez, M. Lobo, E. Pérez, T.A. Shaposhnikova.</b> Averaging in variational inequalities with nonlinear restrictions along manifolds. <i>Comptes Rendues de Mecanique</i> , 339, p. 406--410, 2011
6.	<b>D. Gómez, E. Pérez, T.A. Shaposhnikova.</b> On homogenization of nonlinear Robin type boundary conditions for cavities along manifolds and associated spectral problems. <i>Asymptotic Analysis</i> , 80, 2012, 289—322
7.	<b>E. Pérez, T.A. Shaposhnikova.</b> Boundary homogenization of a variational inequality with nonlinear restrictions for the flux on small regions lying on a part of the boundary. <i>Doklady Mathematics</i> , 2012, Vol. 85, No. 2, p. 198—203 (Traducido de <i>Doklady Akademii Nauk</i> , Vol. 443, No. 2, 158—163)
8.	<b>D. Gómez, M. Lobo, E. Pérez, T.A. Shaposhnikova.</b> Averaging of a variational inequality for the Laplacian with nonlinear restrictions along manifolds. <i>Applicable Analysis</i> , V. 92, Issue 2, 2013, p. 218—237
9.	<b>D. Gómez, M. Lobo, E. Pérez, T.A. Shaposhnikova, M. Zubova.</b> Homogenization problem in domain perforated by thin tubes with nonlinear Robin type boundary condition. <i>Doklady Mathematics</i> , Vol. 87, No. 1, 2013, p. 5-11. (traducido del ruso <i>Doklady Akademii Nauk</i> , Vol. 448, No. 1, p. 11-18.)
10.	<b>D. Gómez, M. Lobo, E. Pérez, T.A. Shaposhnikova.</b> On correctors for spectral problems in the homogenization of Robin boundary conditions with very large parameters. <i>International Journal of Applied Mathematics</i> , Vol. 26, No 3, 2013, p. 309-320
11.	<b>D. Gómez, M. Lobo, E. Pérez, A.V. Podolskiy, T.A. Shaposhnikova.</b> Homogenization for the p-Laplace operator and nonlinear Robin boundary conditions in perforated media along manifold. <i>Doklady Mathematics</i> , Vol. 89, No. 1, 2014, p. 11–15. (traducido del ruso, <i>Doklady Akademii Nauk</i> , 2014, Vol. 454, No. 1, p. 18–22.)
12.	<b>E. Pérez, T.A. Shaposhnikova, M. N. Zubova.</b> A homogenization problem in a domain perforated by tiny isoperimetric holes with nonlinear Robin type boundary conditions. <i>Doklady Mathematics</i> , Vol. 90, No. 1, 2014, p. 489–494 (traducido del ruso en <i>Doklady Akademii Nauk</i> , 2014, Vol. 457, No. 5, p. 520–525.
13.	<b>D. Gómez, M. Lobo, E. Pérez, T.A. Shaposhnikova, M. N. Zubova.</b> On critical parameters in homogenization of perforated domains by thin tubes with nonlinear flux and related spectral

	problems. Mathematical Methods in Applied Sciences, Online 7 Julio de 2014 DOI: 10.1002/mma.3246 (24p.)
14.	<b>A. Gaudiello, K. Hamdache.</b> The polarization in a ferroelectric thin film: local and nonlocal limit problems, ESAIM Control Optim. Calc. Var. 19 , 2013 , p.657-667.
15.	<b>A. Gaudiello, O. Guibé,</b> Homogenization of an elliptic second-order problem with $L \log L$ data in a domain with oscillating boundary, Commun. Contemp. Math., 15 (6) (2013), 1-13.

## E2. Publicaciones en libros/capítulos de libros

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

1.	<b>E. Pérez.</b> On quasimodes for compact operators and associated evolution problems. Integral Methods in Science and Engineering: Computational and Analytic Aspects, Birkhauser Boston, Springer, 2011, p.313-324, ISBN 978-0-8176-8237-8
2.	<b>D. Gómez, S. Nazarov, E. Pérez.</b> Spectral stiff problems in domains with strongly oscillating boundary. Integral Methods in Science and Engineering: Computational and Analytic Aspects, Birkhauser Boston, Springer, 2011. p.159-172, ISBN 978-0-8176-8237-8
3.	<b>D. Gómez, E. Pérez, T.A. Shaposhnikova.</b> Spectral boundary homogenization problems in perforated domains with Robin boundary conditions and large parameters. Integral Methods in Science and Engineering: Progress in Numerical and Analytic Techniques Birkhauser Boston, Springer (ISBN: 978-1-4614-7827-0), Chapter 11, p. 155-174, 2013