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Research interest: Asymptotic analysis of differential equations; Homogenization, Multiscale systems; Navier-Stokes system; Mathematical modeling in continuum mechanics

Recent publications:

[1] Fratrović, Tomislav; Marušić-Paloka, Eduard, *Low-volume-fraction limit for polymer fluids*, **Journal of mathematical analysis and applications, 373** (2011) , 2; 399-409.
[2] Marušić-Paloka, Eduard; Pažanin, Igor, *On reactive solute transport through a curved pipe* , **Applied mathematics letters, 24** (2011) , 6; 878-882.
[3] Bourgeat, Alain; Marušić-Paloka, Eduard; Piatnitski, Andrey, *Scaling up of an underground nuclear waste repository including a possibly damaged zone*, **Asymptotic analysis, 67** (2010) , 3-4; 147-165.
[4] Marušić-Paloka, Eduard; Pažanin, Igor, *On the effects of curved geometry on heat conduction through a distorted pipel*, **Nonlinear Analysis: Real World Applications, 11** (2010) , 6; 4554-4564.
[5] Marušić-Paloka, Eduard; Starčević, Maja, *Derivation of Reynolds equation for gas lubrication via asymptotic analysis of the compressible Navier–Stokes system*, **Nonlinear Analysis: Real World Applications, 11**(2010) , 6; 4565-4571 (članak, znanstveni).

Selected publications:

[1] A.Bourgeat, E.Marušić-Paloka, A.Mikelić, *Weak Non-Linear Corrections for Darcy's Law*, **Mathematical Models and Methods in Applied Sciences, (6) 8** (1996), 1-13
[2] E.Marušić-Paloka, A.Mikelić, *The derivation of a nonlinear filtration law including the inertia effects via homogenization*, Nonlinear Analysis, **Theory Methods and Applications, Vol 42, No 1** (2000), 97-137.
[3] Marušić-Paloka E., *Solvability of the Navier-Stokes system with L^2 boundary data*, **Applied Mathematics and Optimization, Vol 41, No 3** (2000), 365-375.
[4] Marušić-Paloka E., *The effects of flexion and torsion for the flow of a fluid through a curved pipe*, **Applied Mathematics and Optimization, 44** (2001), 245-272.
[5] Bourgeat A., Gipouloux O., Marušić-Paloka E.,*Mathematical modelling and numerical simulation of a non-newtonian viscous flow through a thin filter*, **SIAM Journal on Applied Mathematics, Vol 62, No 2** (2002), 597-626.