

## List of Publications

### 1. Text Book – used in many Universities in Brazil

Swiercoski R. F. “*Matemática Aplicada às Ciências Agrárias: Análise de Dados e Modelos*”. Viçosa : Editora UFV, 333p. (6<sup>th</sup> reprint). (2008 )<sup>1</sup>. Key-words: Mathematical Modeling, Precision Agriculture, Data Analysis.<sup>2</sup>

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### 2. Patent - US 8,204,690 B2 – LANL&Chevron Partnership

Swiercoski, R. F. "Analytical Effective Tensor for Flow-through Composites". Assignee: Los Alamos National Laboratory. June 19<sup>th</sup> (2012).

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## Scientific Papers and Posters

3. Swiercoski, R.F., Efendiev, Y. , Mohanty, B., Yuan, Y.J., " *Upscaling the coupled water flow and heat transfer in the subsurface – Comparison between numerical and field data*", [AIChE Conference Proceedings](#) 1684, 030010 (2015);
4. Swiercoski, R.F., Popov, P., Margenov, S. " *An Analytical Coarse Grid Operator Applied to Multiscale Multigrid Method*". *Journal of Computational and Applied Mathematics* 03/2015: 287. DOI:10.1016/j.cam.2015.03.001 (2015). **I. Factor. 1.547**
5. Sellier, J.M., Swiercoski, R.F., Dimov, I. " *On the Wigner Monte Carlo Method Coupled with Pseudopotentials models*" *Journal of Computational and Applied Mathematics* 01/2015: 333. DOI:10.1016/j.cam.2015.01.033 (2015). **I. Factor. 1.547**
6. R. Swiercoski, S. Margenov.; “*A Multiscale Multilevel Algorithm using Analytical Coarse Grid Operator Applied to Bone Tissue Modeling*”. In: *Mathematics in the Industry*, edited by A. Slalova. Pp 88-100. (2014)- Cambridge Scholars.
7. R. Swiercoski, S. Margenov. “*Displacement Decomposition ACO Based Preconditioning for FEM Elasticity Systems*”. *AIP Conf. Proc.* 1561, 112 (2013) <http://dx.doi.org/10.1063/1.4827220>. **citations:1**
8. Swiercoski, R. F. " *Review on Analytical Approximation for the Generalized Laplace's Equation and Applications in Multiscale Modeling*". *Proc. 7th meeting of the Bulgarian section of the SIAM – Sofia - p. 125-135. (12/2012). ISSN: 1314-7145.*
9. Swiercoski R. F. , “*An analytical effective tensor and its approximation properties for*

*upscaling flows through generalized composites*", Adv. Water Resour. doi:10.1016/j.advwatres.2010.03.011, (2010). **I. Factor. 3.417 citations:5**

10. Sviercoski, R. F., Margenov, S. "A Hybrid Multiscale Multigrid Approach by Incorporating Analytical Results". Proc. 4th meeting of the Bulgarian section of the SIAM – Sofia - p. 111-116. (2009).
11. Sviercoski, R. F., Warrick, A.W., Winter, C. L. "Homogenization of the n-dimensional Richards' equation by a two-scale asymptotic expansion" Water Resources Research. 45, W05403, 10 PP., doi:10.1029/2006WR005598 (2009). **I. Factor. 3.549, citations:6**
12. Sviercoski, R. F., Popov, P., Travis, B. J., "A Zeroth and First-Order Homogenized Approximations to Nonlinear Diffusion through Block Inclusions, by an Analytical Approach" Computer Methods in Applied Mechanics and Eng., Vol.198, Issues 30-32, Pages 2260-2271 (2009). **I. Factor. 3.395, citations:3**
13. Sviercoski, R. F., Travis, B. J., Hyman, J. M., "Analytical Effective Coefficient and First-Order Approximation for Linear Flow through Block Permeability Inclusions", Comp. Math. Appl., 55, pp. 2118-2133, (2008). **I. Factor. 1.7, citations:8**
14. Sviercoski, R. F., Winter, C. L., Warrick, A.W., "Analytical Approximation for the generalized Laplace's Equation with Step Function Coefficient". SIAM J. Applied Math, 68 (5) – pp. 1268-1281. (2008). **I. Factor. 1.428 citations:9**
15. Sviercoski, R. F., Travis, B. J., "Analytical Effective Coefficient and First-Order Approximation to Linear Darcy's Law through Block Inclusions". Lecture Notes in Computer Sciences - vol. 4818, Springer (2008).
16. Sviercoski, R. F., Travis, B. J., "Analytical Homogenized Approximation Applied to Two-Phase Immiscible Flow: Upscaling Darcy's Law" 26<sup>th</sup> Oil-Shale Symposium CERI 2007-4. (2007).
17. Miller, S.G.; Sviercoski, R.F.; Travis, B.J.; Eggert, K. "Reanalysis of Data from River Discharge and Gauge Height for the Amazon Basin", Poster H31D-0641, AGU - Fall Meeting - San Francisco – Dec. 10-14 (2007).
18. Sviercoski, R. F., Travis, B. J., "Analytical Effective Coefficient for Flow Equations in Porous Media by Homogenization Theory", Proceeding on Multiscale Materials Modeling, pp 885-888, Germany (2006).
19. Sviercoski, R. F., Winter, C. L., Warrick, A.W; "Multiscale Analytical Solutions and Homogenization of n-dimensional Generalized Elliptic Equation". In: **Numerical Upscaling Theory and Applications**, Editors: A. Brandt, R. Ewing and O. Iliev. Oberwolfach Report/20, pp. 37-40 (2005).
20. Sviercoski, R. F. "Multiscale Analytical Solutions and Homogenization of n-dimensional

*Generalized Elliptic Equation*". PhD Dissertation, <http://hdl.handle.net/10150/194912> (2005).

21. Sviercoski, R. F., Winter, C. L., Warrick, A.W. " *An Explicit Form for a N-Dimensional Homogenized Tensor*" Poster H41D-02, (2004) AGU – Joint Assembly – May 17-21- (2004) Montreal-CA.
22. Sviercoski, R. F. " *Uma Extensão do Algoritmo do Ponto Proximal para Programação Linear Quadrática Estendida*" , Master's Thesis. Universidade de Brasília (UnB). (1995).