

Research Articles: 2015

Aphane, V. & Vermeulen, PD. 2015. Acid mine drainage and its potential impact on the water resources in the Waterberg coalfield. *Applied Mathematical Modelling* 118: 55-77.

Atangana, A. 2015. Modeling the Enzyme Kinetic Reaction. *Acta Biotheoretica* 1-18.

Atangana, A. 2015. Extension of the sumudu homotopy perturbation method to an attractor for one-dimensional keller–segel equations. *Applied Mathematical Modelling* 39(10): 2909-2916.

Atangana, A. 2015. A new defy for iteration methods. *Journal of Applied Analysis and Computations* (3): 273-283.

Atangana, A. 2015. On the stability and convergence of the time-fractional variable order telegraph equation. *Journal of Computational Physics* 293: 104-114.

Atangana, A. 2015. Numerical analysis of time fractional three dimensional diffusion equation. *Thermal Science* 19(1): 7-12.

Atangana, A. 2015. Extension of the resistance, inductance, capacitance electrical circuit to fractional derivative without singular kernel. *Advances in Mechanical Engineering* 7(6): 1-6.

Atangana, A. 2015. A novel model for the Lassa Hemorrhagic Fever: Deathly disease for pregnant women. *Neural Computing and Applications* 26: 1895-1903.

Atangana, A. & Alkahtani, B.S.T. 2015. Analysis of the Keller-Segel Model with a Fractional Derivative without Sinular Kernel. *Entropy* 17(6): 4439-4453.

Atangana, A. & Alabaraoye, E. 2015. A possible modification of groundwater flow equation using coordinate transformations. *Water Science and Technology: Water Supply* 15(2): 278-287.

Atangana, A. & Alabaraoye, E. 2015. On the modified groundwater flow equation: Analytical solution via iteration method. *Hydrological Processes* 29(19): 4284-4292.

Atangana, A. & Baleanu, D. 2015. On modelling the groundwater flow within a confined aquifer. *Romanian Journal of Physics* 60(3-4): 573-582.

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Atangana, A., Baleanu, D., Yang, X. & Mohamed I Al Qurash, M. 2015. On the nonlinear perturbation (n ,) Rosenau-Hyman equation: A model of nonlinear scattering waves. *Advances in Mathematical Physics* 15: 1-8.

Atangana, A. & Goufo, E. 2015. Solution of diffusion equation with local derivative with new parameter. *Thermal Science* 19(1): 231-238.

Atangana, A. & Nieto, J.J. 2015. Numerical solution for the model of RLC circuit via the fractional derivative without singular kernel. *Advances in Mechanical Engineering* 700: 1-7.

Batogna, R.G. & Atangana, A. 2015. Comparison of two iteration methods for solving nonlinear fractional partial differential equations. *International Journal of Mathematical Models and Methods in Applied Sciences* 9: 105-113.

Dubey, R.S., Saad, B., Alkahtani, Badr Saad, T. & Atangana, A. 2015. Analytical solution of space-time fractional fokker-planck equation by homotopy perturbation sumudu transform method. *Mathematical Problems in Engineering* 1-7

Gomo, M. & Vermeulen, P.D. 2015. An investigative comparison of purging and non-purging groundwater sampling methods in Karoo aquifer monitoring wells. *Journal of African Earth Sciences* 103: 81-88.

Goufo, E. & Atangana, A. 2015. Extension of fragmentation process in a kinetic-diffusive wave system. *Thermal Science* 19(1): 13-23.

Goufo, E. & Atangana, A. 2015. A model of the groundwater owing within a leaky aquifer using the concept of local variable order derivative. *Journal of Nonlinear Science and Applications* 8(5): 763-775.

Kumar, D., Purohit, S., Secer, A. & Atangana, A. 2015. On generalized fractional kinetic equations involving generalized bessel function of the first kind. *Mathematical problem in Engineering*: 1-7.

Book

Atangana, A. 2015. *Local derivative with new parameter: Theory, methods and applications*. Elsevier: Academic press.

Chapter in Book

Atangana, A. 2015. Application of fractional calculus to epidemiology. In *Fractional dynamics* edited by C. Cattani, H.M. Srivastava and Xiao-Jun Yang. Berlin, Germany: De Gruyter. Chapter 10.

Conference Contributions

Brendenkamp, L. Hydraulic fracturing and Water Resources: Separating fact from fiction. 14th Groundwater Division of the Geological Society of South Africa Conference, Muldersdrift, 21-23 September 2015.

Deyssel, L. An Acid Base Accounting study of the coal-bearing formations in the Waterberg coalfield. 14th Groundwater Division of the Geological Society of South Africa Conference, Muldersdrift, 21-23 September 2015.

Fourie, F. Introduction to National Groundwater Strategy. 14th Groundwater Division of the Geological Society of South Africa Conference, Muldersdrift, 21-23 September 2015

Gomo, M. Effects of artefacts other than horizontal groundwater flux on a single-borehole tracer dilution test: Field evidence. 14th Groundwater Division of the Geological Society of South Africa Conference, Muldersdrift, 21-23 September 2015.

Haumann, K. Investigating the impact of fertilizer effluent disposed in quarries on groundwater quality. 14th Groundwater Division of the Geological Society of South Africa Conference, Muldersdrift, 21-23 September 2015.

Lourens, P.J.H. Investigating the influence of fine ash leaching in a tailings dam on the underlying aquifers. 14th Groundwater Division of the Geological Society of South Africa Conference, Muldersdrift, 21-23 September 2015.

Lukas, E. A management plan towards the flooding of an open-cast mine with adjacent underground sections. 14th Groundwater Division of the Geological Society of South Africa Conference, Muldersdrift, 21-23 September 2015.

Lukas, E. & Vermeulen, P.D. A management plan towards the flooding of an open-cast mine with adjacent underground sections. 10th International conference on acid rock drainage & IMWA annual conference. Santiago, Chile. 21 April 2015

Makhokha, D. & Fourie, F. A systematic approach to the interpretation of conductivity anomalies across intrusive dolerite dykes and sills in the Karoo supergroup. 14th Groundwater Division of the Geological Society of South Africa Conference, Muldersdrift, 21-23 September 2015.

Makoe, M., Molaba, L., Van der Merwe, J. & Fourie, F. Investigating the potential of using groundwater associated with a ring dyke to augment the municipal water supply to Bloemfontein. 14th Groundwater Division of the Geological Society of South Africa Conference, Muldersdrift, 21-23 September 2015.

Mphambukeli, T.N. & Oke, S.A. Towards sustainability: practical options for irrigation water conservation at the Bloemfontein campus of the University of the Free State. 8TH Quantity surveying conference. Bloemfontein, 14-16 October 2015.

Oke, S.A., Vermeulen, P.D. & Gomo, M. Aquifer vulnerability assessment of the Dahomey Basin using RTt method. Groundwater Vulnerability - From Scientific Concept to Practical Application International Conference, Poland, 25–29 May 2015.

Shakhane, T. & Fourie, F. Quantifying groundwater-surface water exchange fluxes based on the steady state riparian area aquifer water balance. 14th Groundwater Division of the Geological Society of South Africa Conference, Muldersdrift, 21-23 September 2015.

Van Deventer, F. Modelling recharge in an opencast coal mining environment, applying model parameters on a catchment scale. 14th Groundwater Division of the Geological Society of South Africa Conference, Muldersdrift, 21-23 September 2015.

Van Niekerk, J. Water balance calculations in a rehabilitated environment. 14th Groundwater Division of the Geological Society of South Africa Conference, Muldersdrift, 21-23 September 2015.