

Journal publications

- Khait, M. and D. Voskov (2018). "Operator-based linearization for efficient modeling of geothermal processes". *Geothermics* 74, pp. 7–18.
- Li, L., D. Voskov, J. Yao, and Y. Li (2018). "Multiphase transient analysis for monitoring of CO₂ flooding". *Journal of Petroleum Science and Engineering* 160, pp. 537–554.
- Abushaikha, A.S., D.V. Voskov, and H.A. Tchelepi (2017). "Fully implicit mixed-hybrid finite-element discretization for general purpose subsurface reservoir simulation". *Journal of Computational Physics* 346, pp. 514–538.
- Alzayer, A.N., D.V. Voskov, and H.A. Tchelepi (2017). "Relative Permeability of Near-Miscible Fluids in Compositional Simulators". *Transport in Porous Media*, pp. 1–27.
- Hajibeygi, H., J.D. Jansen, O. Leeuwenburgh, and D. Voskov (2017). "Editorial". *Computational Geosciences* 21.5-6, p. 833.
- Khait, M. and D.V. Voskov (2017). "Operator-based linearization for general purpose reservoir simulation". *Journal of Petroleum Science and Engineering* 157, pp. 990–998.
- Mahani, H., R. Menezes, S. Berg, A. Fadili, R. Nasralla, D. Voskov, and V. Joekar-Niasar (2017). "Insights into the Impact of Temperature on the Wettability Alteration by Low Salinity in Carbonate Rocks". *Energy and Fuels* 31.8, pp. 7839–7853.
- Voskov, D.V. (2017). "Operator-based linearization approach for modeling of multiphase multi-component flow in porous media". *Journal of Computational Physics* 337, pp. 275–288.
- Voskov, D.V., H. Henley, and A. Lucia (2017). "Fully compositional multi-scale reservoir simulation of various CO₂ sequestration mechanisms". *Computers and Chemical Engineering* 96, pp. 183–195.
- Zaydullin, R., D.V. Voskov, and H.A. Tchelepi (2017). "Comparison of EoS-Based and K-Values-Based Methods for Three-Phase Thermal Simulation". *Transport in Porous Media* 116.2, pp. 663–686.
- Volkov, O. and D.V. Voskov (2016). "Effect of time stepping strategy on adjoint-based production optimization". *Computational Geosciences* 20.3, pp. 707–722.
- Voskov, D., R. Zaydullin, and A. Lucia (2016). "Heavy oil recovery efficiency using SAGD, SAGD with propane co-injection and STRIP-SAGD". *Computers and Chemical Engineering* 88, pp. 115–125.
- Zaydullin, R., D.V. Voskov, and H.A. Tchelepi (2016). "Phase-state identification bypass method for three-phase thermal compositional simulation". *Computational Geosciences* 20.3, pp. 461–474.
- Elenius, M.T., D.V. Voskov, and H.A. Tchelepi (2015). "Interactions between gravity currents and convective dissolution". *Advances in Water Resources* 83, pp. 77–88.
- Iranshahr, A., Y. Chen, and D.V. Voskov (2014). "A coarse-scale compositional model". *Computational Geosciences* 18.5, pp. 797–815.
- Zaydullin, R., D.V. Voskov, S.C. James, H. Henley, and A. Lucia (2014). "Fully compositional and thermal reservoir simulation". *Computers and Chemical Engineering* 63, pp. 51–65.
- Iranshahr, A., D.V. Voskov, and H.A. Tchelepi (2013a). "A negative-flash tie-simplex approach for multiphase reservoir simulation". *SPE Journal* 18.6, pp. 1140–1149.
- Iranshahr, A., D.V. Voskov, and H.A. Tchelepi (2013b). "Tie-simplex based compositional space parameterization: Continuity and generalization to multiphase systems". *AIChE Journal* 59.5, pp. 1684–1701.
- Rannou, G., D. Voskov, and H. Tchelepi (2013). "Tie-line-based K-value method for compositional simulation". *SPE Journal* 18.6, pp. 1112–1122.
- Zaydullin, R., D.V. Voskov, and H.A. Tchelepi (2013b). "Nonlinear formulation based on an equation-of-state free method for compositional flow simulation". *SPE Journal* 18.2, pp. 264–273.
- Iranshahr, A., D.V. Voskov, and H.A. Tchelepi (2012). "Gibbs energy analysis: Compositional tie-simplex space". *Fluid Phase Equilibria* 321, pp. 49–58.
- Voskov, D. (2012). "An Extended Natural Variable Formulation for Compositional Simulation Based on Tie-Line Parameterization". *Transport in Porous Media* 92.3, pp. 541–557.
- Voskov, D.V. and H.A. Tchelepi (2012a). "Comparison of nonlinear formulations for two-phase multi-component EoS based simulation". *Journal of Petroleum Science and Engineering* 82-83, pp. 101–111.
- Iranshahr, A., D. Voskov, and H.A. Tchelepi (2010b). "Generalized negative-flash method for multiphase multicomponent systems". *Fluid Phase Equilibria* 299.2, pp. 272–284.

- Iranshahr, A., D.V. Voskov, and H.A. Tchelepi (2010c). "Tie-simplex parameterization for EOS-based thermal compositional simulation". *SPE Journal* 15.2, pp. 545–556.
- Voskov, D.V. and H.A. Tchelepi (2009). "Compositional space parameterization: Theory and application for immiscible displacements". *SPE Journal* 14.3, pp. 431–440.
- Voskov, D.V. and H.A. Tchelepi (2009b). "Compositional space parameterization: Multicontact miscible displacements and extension to multiple phases". *SPE Journal* 14.3, pp. 441–449.
- Voskov, D.V. and H.A. Tchelepi (2009c). "Tie-simplex based mathematical framework for thermodynamical equilibrium computation of mixtures with an arbitrary number of phases". *Fluid Phase Equilibria* 283.1-2, pp. 1–11.
- Voskov, D. and H.A. Tchelepi (2008a). "Compositional space parametrization for miscible displacement simulation". *Transport in Porous Media* 75.1, pp. 111–128.
- Voskov, D.V. and V.M. Entov (2001a). "Problem of oil displacement by gas mixtures". *Fluid Dynamics* 36.2, pp. 269–278.
- Voskov, D.V. and V.M. Entov (2001b). "To the problem of petroleum replacement by gas mixtures". *Izvestiya Akademii Nauk. Mekhanika Zhidkosti I Gaza* 2, pp. 112–122.
- Voskov, D.V., O.V. Galamaj, and V.M. Entov (2001). "On self-similar solutions of problems of physicochemical underground hydromechanics". *Izvestiya Akademii Nauk. Mekhanika Zhidkosti I Gaza* 1, pp. 126–136.

Conference proceedings

- Abushaikha, A.S., D.V. Voskov, and H.A. Tchelepi (2016). "Mixed hybrid finite-element formulation for general purpose reservoir simulation". *15th European Conference on the Mathematics of Oil Recovery, ECMOR 2016*.
- Alzayer, A., D. Voskov, and H. Tchelepi (2016). "On modification of relative permeability in compositional simulation of near-miscible processes". *15th European Conference on the Mathematics of Oil Recovery, ECMOR 2016*.
- Khait, M. and D. Voskov (2016). "Operator-based linearization for non-isothermal multiphase compositional flow in porous media". *15th European Conference on the Mathematics of Oil Recovery, ECMOR 2016*.
- Voskov, D.V., A. Lucia, and H. Henley (2016). "Modelling of reactive flow and transport in the presence of a complex phase transition phenomena". *15th European Conference on the Mathematics of Oil Recovery, ECMOR 2016*.
- Garipov, T.T., D.V. Voskov, and H.A. Tchelepi (2015). "Rigorous coupling of geomechanics and thermal-compositional flow for SAGD and ES-SAGD operations". *Society of Petroleum Engineers - SPE Canada Heavy Oil Technical Conference 2015, CHOC 2015*, pp. 1282–1297.
- Volkov, O. and D.V. Voskov (2014). "Effect of time stepping strategy on adjoint-based production optimization". *14th European Conference on the Mathematics of Oil Recovery 2014, ECMOR 2014*.
- Voskov, D., R. Zaydullin, and H. Tchelepi (2014). "Phase-state identification bypass method for three-phase thermal compositional simulation". *14th European Conference on the Mathematics of Oil Recovery 2014, ECMOR 2014*.
- Lucia, A., D. Voskov, S.C. James, R. Zaydullin, and H. Henley (2013). "Fully compositional and thermal reservoir simulations efficiently compare EOR techniques". *Society of Petroleum Engineers - SPE Canadian Unconventional Resources Conference 2013 - Unconventional Becoming Conventional: Lessons Learned and New Innovations*. Vol. 2, pp. 769–785.
- Salehi, A., D.V. Voskov, and H.A. Tchelepi (2013). "Thermodynamically consistent transport coefficients for upscaling of compositional processes". *Society of Petroleum Engineers - SPE Reservoir Simulation Symposium 2013*. Vol. 1, pp. 1–16.
- Volkov, O. and D.V. Voskov (2013). "Advanced strategies of forward simulation for adjoint-based optimization". *Society of Petroleum Engineers - SPE Reservoir Simulation Symposium 2013*. Vol. 1, pp. 226–240.
- Zaydullin, R., D.V. Voskov, and H.A. Tchelepi (2013a). "Formulation and solution of compositional displacements in tie-simplex space". *Society of Petroleum Engineers - SPE Reservoir Simulation Symposium 2013*. Vol. 2, pp. 1268–1282.
- Voskov, D.V. and H.A. Tchelepi (2012b). "Tie-simplex-based nonlinear solver for massvariables compositional formulation". *ECMOR 2012 - 13th European Conference on the Mathematics of Oil Recovery*.

- Zaydullin, R., D.V. Voskov, and H.A. Tchelepi (2012). "Compositional formulation based on piece-wise linear representation in tie-simplex space". *ECMOR 2012 - 13th European Conference on the Mathematics of Oil Recovery*.
- Iranshahr, A., D. Voskov, and H. Tchelepi (2011a). "Tie-simplex based simulation of complex compositional displacements: Gibbs free energy minimization". *AIChE Annual Meeting, Conference Proceedings*.
- Iranshahr, A., D. Voskov, and H.A. Tchelepi (2011b). "A negative-flash tie-simplex approach for multiphase reservoir simulation". *Society of Petroleum Engineers - SPE Reservoir Simulation Symposium 2011*. Vol. 2, pp. 966–982.
- Voskov, D.V. (2011). "Modeling of multi-component flow in porous media with arbitrary phase changes". *Proceedings - SPE Annual Technical Conference and Exhibition*. Vol. 4, pp. 2896–2910.
- Voskov, D.V. and H.A. Tchelepi (2011). "Compositional nonlinear solver based on trust regions of the flux function along key tie-lines". *Society of Petroleum Engineers - SPE Reservoir Simulation Symposium 2011*. Vol. 2, pp. 799–809.
- Zaydullin, R., D.V. Voskov, and H.A. Tchelepi (2011). "Nonlinear formulation based on EoS-free method for compositional flow simulation". *Proceedings - SPE Annual Technical Conference and Exhibition*. Vol. 4, pp. 3210–3223.
- Iranshahr, A., D. Voskov, and H. Tchelepi (2010a). "Multiphase compositional space parameterization for general-purpose thermal-compositional simulation". *AIChE Annual Meeting, Conference Proceedings*.
- Kourounis, D., D. Voskov, and K. Aziz (2010). "Adjoint methods for multicomponent flow simulation". *ECMOR 2010 - 12th European Conference on the Mathematics of Oil Recovery*.
- Rannou, G., D.V. Voskov, and H.A. Tchelepi (2010). "Extended K-value method for multi-contact miscible displacements". *ECMOR 2010 - 12th European Conference on the Mathematics of Oil Recovery*.
- Voskov, D. (2010). "New research simulation framework for flow modeling of complex physical system". *AIChE Annual Meeting, Conference Proceedings*.
- Zaydullin, R., D. Voskov, and H. Tchelepi (2010). "Accurate representation of EoS related non-linearities for compositional flow simulation". *AIChE Annual Meeting, Conference Proceedings*.
- Gasmi, C.F., D.V. Voskov, and H.A. Tchelepi (2009). "A new method for thermodynamic equilibrium computation of systems with an arbitrary number of phases". *SPE Reservoir Simulation Symposium Proceedings*. Vol. 2, pp. 780–792.
- Iranshahr, A., D. Voskov, and H. Tchelepi (2009a). "Theory and practice of tie-simplex parameterization for compositional reservoir simulation". *AIChE Annual Meeting, Conference Proceedings*.
- Iranshahr, A., D.V. Voskov, and H.A. Tchelepi (2009b). "Phase equilibrium computations are no longer the bottleneck in thermal compositional EoS based simulation". *SPE Reservoir Simulation Symposium Proceedings*. Vol. 2, pp. 1087–1103.
- Voskov, D. and H.A. Tchelepi (2009a). "Tie simplex based parametrization for compositional reservoir simulation". *ASME International Mechanical Engineering Congress and Exposition, Proceedings*. Vol. 12, pp. 73–76.
- Voskov, D.V., R.M. Younis, and H.A. Tchelepi (2009). "General nonlinear solution strategies for multi-phase multi-component EoS based simulation". *SPE Reservoir Simulation Symposium Proceedings*. Vol. 1, pp. 649–663.
- Voskov, D.V. and H.A. Tchelepi (2008b). "Compositional parametrization for multi-phase flow in porous media". *Proceedings - SPE Symposium on Improved Oil Recovery*. Vol. 2, pp. 1009–1024.
- Voskov, D.V. and H.A. Tchelepi (2008c). "Tie-simplex based framework for general multiphase thermodynamic equilibrium computations". *ECMOR 2008 - 11th European Conference on the Mathematics of Oil Recovery*.
- Entov, V.M. and D.V. Voskov (2007). "On oil displacement by gas injection". *Geo-Siberia 2007*.
- Voskov, D.V. and H.A. Tchelepi (2007). "Compositional space parameterization for flow simulation". *SPE Reservoir Simulation Symposium Proceedings*, pp. 100–110.