

Guotong Ren

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Education

The University of Tulsa, Tulsa OK

08/2016 – 12/2018 (expected) Ph.D., Petroleum Engineering (**GPA: 4.0**)

08/2014 – 05/2016 M.S., Petroleum Engineering (**GPA: 4.0**)

China University of Petroleum in Beijing, China

06/2014 B.S., Oil and Gas Storage and Transportation (**GPA: 3.7**)

Technical Experience

Research Assistant, Future Reservoir Simulation Systems & Technology

08/2016-present

Efficient, accurate, and robust methods to model fracture propagation within reservoir simulators

- Developing 3-D Extended Finite Element Methods to model fracture propagation in heterogeneous media
- Full coupling to compositional multiphase flow and transport

Research Assistant, Future Reservoir Simulation Systems & Technology

07/2015-08/2016

Methods for the numerical simulation of fully-coupled geomechanics and fluid flow in fractured reservoirs

- Developed methodology to couple geomechanics and fluid flow using embedded discrete fracture representations
- Formulated a hybrid method to couple discrete fracture models to multi-continuum models
- Proposed an upscaling methodology to represent natural fractures using multi-continuum models
- Proposed a proppant model to capture hydraulic fracture aperture changes, and addressed numerical instability challenges in the modeling of hydraulic fracture aperture changes

Research Assistant, Future Reservoir Simulation Systems & Technology

03/2015

A Bayesian model selection analysis to test the validity of nonequilibrium multiphase flow models compared to data

- Implemented numerical models that incorporate several nonequilibrium models
- Developed a history matching code and performed matches to experimental data of water-oil displacements
- Computed the Bayesian Information Criterion to assess the relative adequacy of various nonequilibrium models

Scientific and Technological Innovation Analyst, The China University of Petroleum

08/2012

- Used Delphi 7 to design software to deal with college physics experimental data
- Trained three team members for customized software design methods, including the use of the control components, interface design and language grammar

Publications

- Ren, G., and Younis, R.M., 2016. A Fully Coupled XFEM-EDFM-Dual-Porosity Simulator For Fractured Reservoirs, to be presented at the SPE Reservoir Simulation Conference, 2017
- Ren, G., Jiang, J. and Younis, R., 2016. A Fully Coupled XFEM-EDFM Model for Multiphase Flow and Geomechanics in Fractured Tight Gas Reservoirs. *Procedia Computer Science*, 80, pp.1404-1415.
- Ren, G.T., Jiang, J.M. and Younis, R.M., 2016, August. XFEM-EDFM-MINC for Coupled Geomechanics and Flow in Fractured Reservoirs. In *ECMOR XIV-15th European Conference on the Mathematics of Oil Recovery*.
- Ren, G., Rafiee, J., Aryana, S.A and Younis, R.M., 2016. A Model Selection Analysis of Alternative Multiphase Flow in Porous Media. *International Journal of Multiphase Flow*, In review.

Honors and Awards

- China University of Petroleum Outstanding Student Scholarship (top6%) (2011-2013)
- Third Prize of National Tryout for 2013 Asia-Pacific Student Robot Contest (2013)
- Second Prize of National Olympiad in Informatics in Provinces (2009)

Skills

- Computing: C++, Matlab, Java, Solidworks, AutoCAD
- Language: Fluent in Chinese and English