

Accepted Manuscript

A new way to parameterize hydraulic conductances of pore elements:
a step towards creating pore-networks without pore shape
simplifications

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PII: S0309-1708(16)30712-6
DOI: [10.1016/j.advwatres.2017.04.021](https://doi.org/10.1016/j.advwatres.2017.04.021)
Reference: ADWR 2836



To appear in: *Advances in Water Resources*

Received date: 28 November 2016
Revised date: 21 April 2017
Accepted date: 25 April 2017

Please cite this article as: Xiuxiu Miao , Kirill M. Gerke , Timofey O. Sizonenko , A new way to parameterize hydraulic conductances of pore elements: a step towards creating pore-networks without pore shape simplifications, *Advances in Water Resources* (2017), doi: [10.1016/j.advwatres.2017.04.021](https://doi.org/10.1016/j.advwatres.2017.04.021)

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Highlights

- 3292 pore throat cross-section elements were extracted from 3D images of rocks
- Hydraulic conductances were computed numerically on all 3292 cross-sections
- Circularity and convexity were the best predictors of hydraulic conductances
- A novel way to parameterize conductances using neural network was proposed
- Novel approach resulted in 90% of predictions lying within the 20% error bounds

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