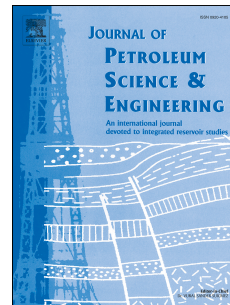


Accepted Manuscript

Feature extraction using a deep learning algorithm for uncertainty quantification of channelized reservoirs

Kyungbook Lee, Jungtek Lim, Seongin Ahn, Jaejun Kim



PII: S0920-4105(18)30645-4

DOI: [10.1016/j.petrol.2018.07.070](https://doi.org/10.1016/j.petrol.2018.07.070)

Reference: PETROL 5167

To appear in: *Journal of Petroleum Science and Engineering*

Received Date: 6 February 2018

Revised Date: 8 June 2018

Accepted Date: 26 July 2018

Please cite this article as: Lee, K., Lim, J., Ahn, S., Kim, J., Feature extraction using a deep learning algorithm for uncertainty quantification of channelized reservoirs, *Journal of Petroleum Science and Engineering* (2018), doi: 10.1016/j.petrol.2018.07.070.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

1 **Feature extraction using a deep learning algorithm for uncertainty quantification of channelized**
2 **reservoirs**

3
4 **Kyungbook Lee ^a, Jungtek Lim ^b, Seongin Ahn ^c, Jaejun Kim ^{d,*}**

5
6 ^a Petroleum and Marine Research Division, Korea Institute of Geoscience and Mineral Resources,
7 Daejeon, 34132, South Korea

8 ^b Smart Mind, Seoul, 09333, South Korea

9 ^c Department of Energy Plant Researching, Samsung Heavy Industries, Seongnam, Gyeonggi 13486,
10 South Korea

11 ^d Department of Energy Systems Engineering, Seoul National University, Seoul, 08826, South Korea

12 * Corresponding author, Tel.: +82-2-880-9308, Fax: +82-2-882-4056, E-mail: jj1504@snu.ac.kr

13
14 **Highlights**

- 15 ● SAE can reduce the dimension of facies models successfully
- 16 ● SAE can be utilized as a measure of distance for calculating dissimilarity between reservoirs
- 17 ● Uncertainty in production is assessed using 20 representative models instead of 800 models
- 18 ● Uncertainty in production is reduced further using 10 qualified models from among 800 models
- 19 ● SAE-based clustering is sensitive to the number of features and hidden layers

Download English Version:

<https://daneshyari.com/en/article/8124374>

Download Persian Version:

<https://daneshyari.com/article/8124374>

[Daneshyari.com](https://daneshyari.com)