

# Accepted Manuscript

Novel 3D sequence stratigraphic numerical model for syn-rift basins: Analysing architectural responses to eustasy, sedimentation and tectonics

B.J. Barrett, D.M. Hodgson, R.E. LI Collier, R.M. Dorrell



PII: S0264-8172(17)30427-0

DOI: [10.1016/j.marpetgeo.2017.10.026](https://doi.org/10.1016/j.marpetgeo.2017.10.026)

Reference: JMPG 3119

To appear in: *Marine and Petroleum Geology*

Received Date: 25 May 2017

Revised Date: 24 October 2017

Accepted Date: 26 October 2017

Please cite this article as: Barrett, B.J., Hodgson, D.M., Collier, R.E.L., Dorrell, R.M., Novel 3D sequence stratigraphic numerical model for syn-rift basins: Analysing architectural responses to eustasy, sedimentation and tectonics, *Marine and Petroleum Geology* (2017), doi: 10.1016/j.marpetgeo.2017.10.026.

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.

**Title:** Novel 3D sequence stratigraphic numerical model for syn-rift basins: analysing architectural responses to eustasy, sedimentation and tectonics

**Authors**

Barrett, B.J. <sup>(1)\*</sup>

Hodgson, D.M. <sup>(1)</sup>

Collier, R.E.Ll. <sup>(1)</sup>

Dorrell, R.M. <sup>(1)</sup>

**Affiliation**

<sup>(1)</sup>School of Earth and Environment, University of Leeds, Leeds, LS2 9JT, UK

\*Corresponding author

**Abstract**

Syn-rift clastic sedimentary systems preserve a complicated stratigraphic architecture that records the interplay of tectonics, eustatic sea level and storage and routing of sediments. Previous conceptual models describe and explain changes in depositional stacking patterns along a fault segment. However, stacking patterns, and the nature of key stratigraphic surfaces, is challenging to predict accurately with conventional sequence stratigraphic models that do not consider the three-dimensional interplay of subsidence, sedimentation, and eustasy. We present a novel, geometric, 3D sequence stratigraphic model ('Syn-Strat'), which applies temporally- and spatially-variable, fault-scale tectonic constraints to stratigraphic forward modelling, as well as allowing flexibility in the other controls in time and space.

Download English Version:

<https://daneshyari.com/en/article/8909121>

Download Persian Version:

<https://daneshyari.com/article/8909121>

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