

平成 30 年度 第 2 回砂岩分科会講演会(日本堆積学会と共催)のご案内

平成 30 年度第 2 回砂岩分科会を下記要領にて開催致します。なお、講演会終了後、会場近傍にて懇親会を開催いたします(会費 4000 円程度を予定)。多数の方のご参加をお待ちしております。

各社砂岩分科会委員におかれましては、**11 月 16 日(金)まで**に各社において講演会および懇親会参加希望者を取りまとめの上、小林(hirofumi.kobayashi@inpex.co.jp) および戸田(kazuma.toda@japex.co.jp)までご連絡をお願い致します。

記

日時:平成 30 年 11 月 26 日(月)15:00~

会場:石油資源開発(株) サピアタワー19 階 1901 会議室

講演者: Hannah Brooks 博士(千葉大学)

演題:An overview of the depositional environments of the Permian Karoo Basin, South Africa: with focus on the 1.8 km progradational fill of the Laingsberg depocenter, from basin plain to deltas.

※詳細は次項を参照

*会場への入館には、事前登録が必要です。参加者は事前に各社取りまとめの上、ご連絡ください。

**11 月 19 日以降に懇親会のキャンセルをされた場合、キャンセル料をいただく可能性があることを予めご承知おきください。

砂岩分科会座長

小林博文(国際石油開発帝石(株)/hirofumi.kobayashi@inpex.co.jp)

戸田数馬(石油資源開発(株)/kazuma.toda@japex.co.jp)

以上

An overview of the depositional environments of the Permian Karoo Basin, South Africa: with focus on the 1.8 km progradational fill of the Laingsburg depocenter, from basin plain to deltas.

Hannah Brooks, Chiba University.

Abstract

The Karoo Supergroup comprises of 5500 m of deep marine to fluvial deposits that span from Late Carboniferous to Triassic. The Late Carboniferous to early Permian period (300 - 280 Ma) was marked regionally by large scale subsidence, producing a series of interconnected basins (Visser and Praekelt, 1996). The evolution and fill of two of these sub-basins, the Laingsburg and Tanqua depocenters have been the focus of study by the Stratigraphy (STRAT) group based at the Universities of Leeds and Manchester (and formally Liverpool) in the UK for several decades. Field work and behind outcrop cores in the Tanqua and Laingsburg depocentres (Karoo Basin, South Africa) have generated a dataset covering some 7500 km², comparable in extent to exploration datasets used in the hydrocarbon industry. The Slope 4 project used this as a framework in order to assess the spatial distribution of depositional environments and architecture, from basin floor to continental systems, and at the larger scale increase understanding of subsidence mechanisms leading to deposition within the Karoo Basin.

This talk will outline the work undertaken by myself and colleagues throughout the Karoo basin, with a focus on the Ecca Group, in the Laingsburg depocenter, a 1800 m thick progradational succession from basin-floor deposits (Vischkuil and Laingsburg formations; Sixsmith et al., 2004; van der Merwe et al., 2010), channelized submarine slope (Fort Brown Fm.; Hodgson et al., 2011; Di Celma et al., 2011; Flint et al., 2011) to shelf-edge and shelf deltas (Waterford Fm.; Jones et al., 2015; Poyatos-Moré et al., 2016). More specifically I will discuss the Laingsburg and Fort Brown formations, consisting of multiple large sand-rich systems (Units A-F) which have been mapped from entrenched slope valleys, through channel-levee systems, to basin-floor lobe complexes over a 2500 km² area. As well as three thinner (typically <5 m), less extensive units (A/B, B/C and D/E) which suggest seabed topography was present early during deep-water sedimentation and was maintained in a similar area that ultimately developed to form a stepped slope profile (Brooks et al., 2018). The stepped slope profile evolved through 3 key stages of development: Phase 1, where sediment supply exceeded deformation rate, causing thickness changes within basin floor lobe complexes; Phase 2, where sediment supply was on average equal to deformation rate, resulting in channel complex entrenchment and basin floor lobe thickness; and Phase 3, where deformation rate outpaced sediment supply, to form intraslope lobes and sediment bypass-dominated zones. This study demonstrates that stepped slope profiles can form progressively in passive margin settings without influence of mobile substrate, and that thin sandstone units are more sensitive records of seabed topography.

References

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