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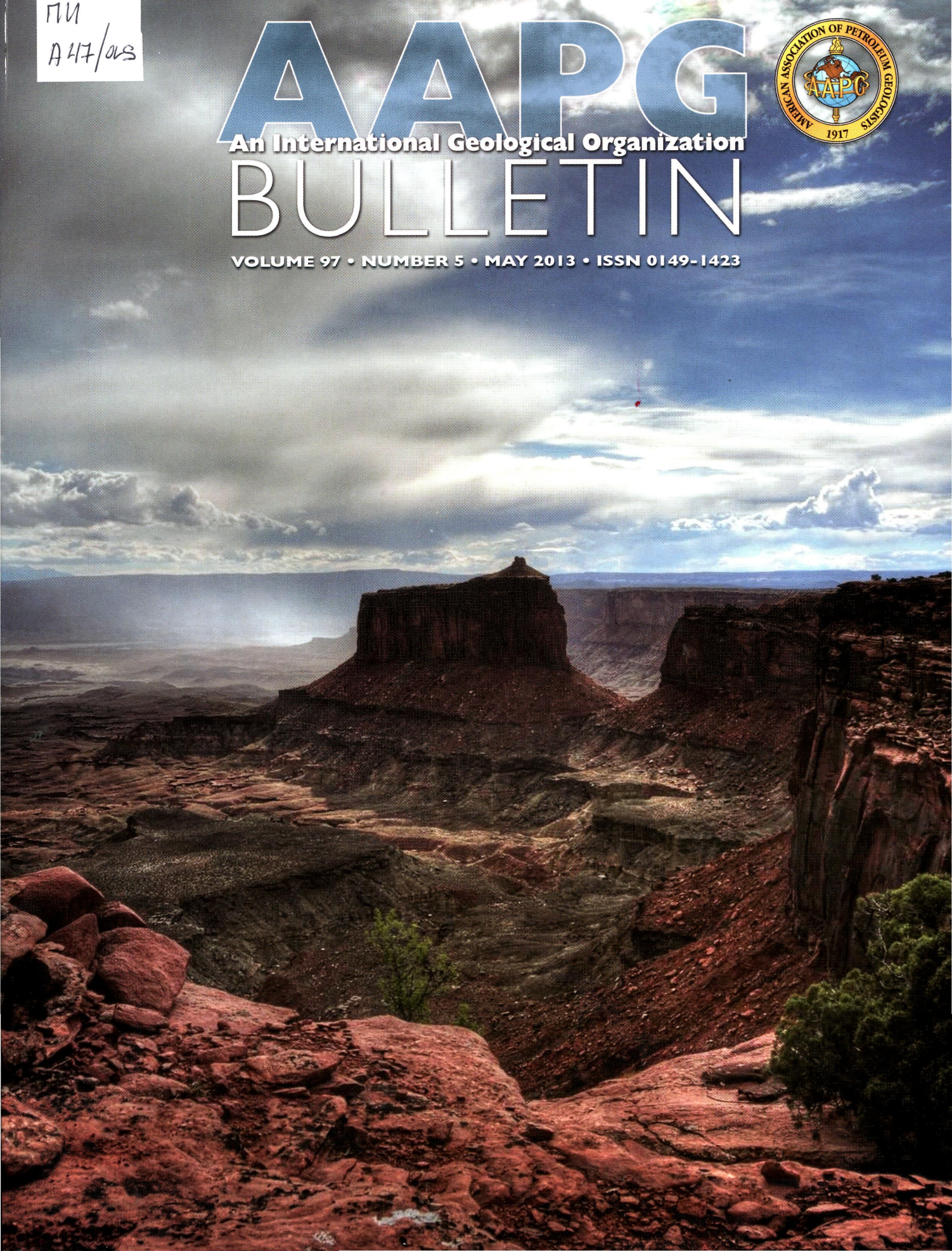

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Fault transmissibility in clastic-argillaceous sequences controlled by clay smear evolution
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Three-dimensional structure of experimentally produced clay smears: Implications for fault seal analysis
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Experimental models of transfer zones in rift systems
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Three-dimensional paleomorphologic reconstruction and turbidite distribution prediction revealing a Pleistocene confined basin system in the northeast Nankai Trough area
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Modern internal waves and internal tides along oceanic pycnoclines: Challenges and implications for ancient deep-marine baroclinic sands
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Outcrop analog for an oolitic carbonate ramp reservoir: A scale-dependent geologic modeling approach based on stratigraphic hierarchy
Frédéric Amour, Maria Mutti, Nicolas Christ, Adrian Immenhauser, Gregory S. Benson, Susan M. Agar, Sara Tomás, and Lahcen Kabiri 845

ON COVER – Cliff-forming Wingate Sandstone, as seen from Upheaval Dome Road toward the Holeman Spring Canyon, Canyonlands National Park. The Wingate is one of several prominent cliff-forming sandstones in the Colorado Plateau. Deformation bands formed in these porous eolian sandstones during deformation, and the abundance of bands formed in different tectonic regimes on the Colorado Plateau has made it the unofficial type area for deformation bands. See Torabi et al., p. 619 of the April 2013 issue of the *Bulletin* for a discussion of the effect of deformation bands on fluid flow.

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PREVIEWS

Experiments in a new fluid flow cell

A new direct shear apparatus was used to run experiments to explore the critical shale smear factor (SSF_c), the SSF where clay smears become discontinuous. Brittle processes such as slicing and wear rather than ductile drag or plastic flow appear responsible for the generation of clay smears. 705

Introducing SSGR

While the shale gouge ratio (SGR) provides a good prediction of the clay fraction in the fault zone, the net clay volume is more influential in fault sealing. The scaled SGR (SSGR), accounting for these additional factors, provided better correlation to hydraulic seal performance. 733

Understanding transfer zones

Transfer zones, common features in rift basins, are significant locations for the development of structural traps. Experimental models of transfer zones have been developed to better understand their geometry and evolution and to compare with observations in surface and subsurface structures. 759

Turbidite sand prediction

The Ogasa Group in the Nankai Trough contains gas hydrate-related deepwater turbidite sequences. Three-dimensional horizon surfaces mapped from 3D seismic and well log data can predict paleobasin characteristics and depositional processes in deepwater turbidite systems. 781

Significance unappreciated

Internal waves associated with baroclinic currents can form deep marine sands. Although they are documented in modern marine settings, there is no way to distinguish ancient counterparts, and potential exists for misinterpreting these deposits as turbidites or other similar features. 799

A thought process for modeling geological data

Considerable effort has been devoted to the development of simulation algorithms for facies modeling. This study, using outcrop analogs, shows that the use of one single simulation technique is unlikely to correctly model the natural patterns and variability of carbonate rocks. 845