JUNE 21-25, 2021

"Fundamentals of Extensional Basins"

by James W. Granath, PhD

This workshop is conducted online with 3.5 - hr sessions over 5 days

Continental extensional terranes or "rifts" are some of the most hydrocarbon productive provinces in the world. This workshop focusses on the natural history and the subsurface character of structural features in continental rifts and the basics of extensional deformation, i.e. normal faulting, its relationship to secondary structures, and the character of the rift structural style. This 3-session workshop will introduce the diversity of extensional basins around the world, discuss the structural elements typical in both thin-skinned systems and intra-continental basement-involved rifts, and especially emphasize their seismic signatures It will focus on their interpretation, the role of the structures in petroleum system, and interactions with their sedimentary growth sections.

The philosophy behind the approach to seismic interpretation used here is a kinematic one, stressing understanding of the kinematic and dynamic evolution of rift basins, and hence also validation of the interpretation. The workshop uses various exercises to illustrate validation thinking from the inception of a project.

Dr. James W. Granath is a consulting structural geologist based in Denver, Colorado, who has worked in academia and both minerals and petroleum exploration. Since 1976 he has taught at SUNY Stony Brook and spent 18 years with Conoco Inc. in research, international exploration, and new ventures. In 1999 he opened a consulting practice focused on structural geology and tectonics as applied to exploration problems, interrupted only by brief periods of exclusivity with Forest Oil and Midland Valley Exploration in Denver, and worked on projects in some 40 countries around the world. He is a member of AAPG, GSA, and RMAG, a certified petroleum geologist (#5512). He is the author of numerous research papers and co-edited several multi-author compendia. His expertise lies in seismic interpretation and integration with structural analysis, fracture analysis, regional synthesis, and prospect and play evaluation. Recent notable projects have included the Karoo rifts in Africa, the Kurdistan and Oaxaca fold & thrust belts, and the Colorado Rockies. He holds his PhD from Monash University in Australia, and a BS and MS from of University of Illinois at Champaign-Urbana.

This workshop will adjust to participants experience level and interest as much as possible. Therefore, we will ask you beforehand to provide some information why you are taking this course, what your experience level is with the subject matter and the type of work you want to apply the learned content.

In addition, we are offering free follow-up consultation via email or phone to discuss and advise on your specific challenges and projects.

This course is available for single participants as well as small groups (multi-client) and large groups (inhouse) – see below.

Course Outline

Session 1

Regional settings and gross features of extensional basins

- Participant and instructor introductions
- Rift Basins around the world: geomorphic features,
- Impact of rifting on the crust, thermal implications, relationship to magmatism and volcanism

Session 2

Gross features and internal structure

- Stress during normal faulting and tectonic conditions conducive to normal faulting
- Anatomy and kinematics of normal faults and normal fault systems
- Graben, half graben, and domino structural styles and their interrelationships across scales

Session 3

Internal structure of rift basins

- Fault nucleation and propagation
- Fault shapes and seismic signatures
- Fault linkages, relay ramps

Session 4

Extensional basins and the petroleum system

- Implications of fault linkage to sedimentation, topography, and petroleum systems
- Growth stratigraphy

Session 5

Extensional basins and the petroleum system

- Extensional systems in relation to other styles: the marriage with strike-slip tectonics
- Inversion
- Typical trapping styles in rifted environments

COURSE LOGISTICS AND REGISTRATION

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Time:	Monday, June 21 – Friday, June 25, 2021 at 8 – 11:30 am Central Time US (Houston)
Venue:	ZOOM Meeting Platform. Meeting link will be sent after payment has been made or initiated. You do not need a ZOOM license, you will only need to download the plugin upon entering. If you require a different online meeting platform, we can arrange for that.
Included:	Manual pdf, certificates on request
Price:	Single participant USD 975/900*; Multi-client USD 3,250, Inhouse USD 4,250
Register:	**Follow link to register**

Single participant - regular price for 1 participant (public schedule)
Single participant - discount price for 1 participant unemployed, academics and > 1 course booked (public schedule)*
Multi-client price for group up to 5 participants from the same company (public or custom schedule)
Inhouse price for group up to 25 participants from the same company (custom schedule)