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## Geometry and evolution of fold-thrust belt: Insight sandbox modeling

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Fold-Thrust-Belt (FTB) deformation is very complex due to their geometries such as low angle, stacking and thickening. Relationships between shortening and fault geometries as well as their sequences are the main important issues in understanding FTB deformation. However, in many cases is difficult to analyze using subsurface data due to the poor seismic image quality as a results of complex deformation style particularly tight folds and steep faults. Therefore, in evaluation FTB need to focus in conducting retrodeformable sequences or palinspatic reconstructions trough balancing cross-sections. The result of palinspatic reconstructions will validate using sandbox modeling. This paper is presented results of presented essential roles of Sandbox Modeling in supporting the understanding of FTB deformation. The results of the study show the importance of pre-existing structures in controlling FTB deformation styles. Others geological data such as mechanical stratigraphy thickness governed by facies and their initial slope is among the important parameter which clearly influenced in the final results of deformation. Basement configuration is one of the parameters seems to have major impact in fault styles such as thin-skinned versus thick-skinned FTB. Understanding these initial parameters conditions are very important issue in order to have the best modeling results. The result of this study was validated using 2D seismic data from Eastern Indonesia which consider as the main frontier exploration target area. This exercise is very important in order to explore FTB hydrocarbon potential particularly related to trap integrity, hydrocarbon maturation and migration issue as well as reservoir porosity.

### Biography

Benyamin Sapiie has completed his PhD and Post-doctoral studies in Structural Geology from the University of Texas at Austin, USA. Currently, he is the Dean of Faculty of Earth Sciences and Technology, Institut Teknologi Bandung, Indonesia. His reseach interest include fault and fracture mechanics, analogue sandbox modeling, active tectonic, earthquakes and geomechanics. He has published several papers in reputed journals and has been received various awards.

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