

Balancing Cross-Sections and Fractures Characterization of Rajamandala Limestone; Western Java, Indonesia

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Rajamandala Limestone is one of the oldest carbonate formation exposed along NE-SW trending valley of Cimandiri strike-slip fault system in western part of Java Island. The age of Rajamandala Limestone is Late Oligocene which correlates with major carbonate reservoir producer in the East Java Basin. The main purpose of this paper is presented results of structural reconstructions of Rajamandala Limestone using 2D/3D balancing cross-section technique for understanding relationship to fractures style, pattern and intensity.

The outcrop of Rajamandala Limestone is characterized distinct morphology consisting of ENE -SSW trending thrust faults forming an echelon valleys and ridges that are cut by NNW-SSE trending tear faults. Balancing cross-sections suggests that this area have been subjected more than 40% shortening since Pliocene time. Seemingly, shortening is largely accommodated along the two major thrust systems which separated two Rajamandala Limestone outcrops in the north and south. Deformation style is modeled as thin-skinned fold-thrust system with Late Eocene thick shale units of Bayah Formation as major detachment surface.

Fractures characterization was conducted in nine locations using scan-line method. Fractures were divided into joints, faults, veins and stylolites. All type of fractures were measured and characterized within the scan-line including their relationship to carbonate facies. The results indicate that fractures intensity higher toward the major thrust faults and their number seemingly control by types of carbonate facies.