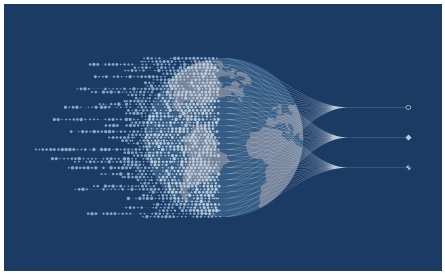

ID: **P1.2-413** Type: **E-poster**

Normal to Strike-Slip: Stress Regime Transition in Egypt and its Implications

Undoubtedly, the study of stress tensor inversion and the identification of the types of affected forces in any region are of paramount importance in the fields of seismology and earthquake hazard analysis. In this study, we comprehensively collected all available focal mechanism solutions for earthquakes in the vicinity of Egypt. Utilizing the Kagan angle to assess the homogeneity of the focal mechanism solutions, we obtained homogeneous and reliable solutions, thus enabling us to calculate the stress tensor inversion. Consequently, a comprehensive study was conducted on the stress tensor inversion, focusing on both northern and southern Egypt. A comparison was made between the stress tensor derived for these regions, revealing a transition from normal stress in the northern region to a strike-slip regime in the southern one. This observation prompts further investigation into the causes of this transition and its potential correlation with regional tectonic activity.

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Session Classification: P1.2 The Solid Earth and its Structure

Track Classification: Theme 1. The Earth as a Complex System: T1.2 The Solid Earth and its Structure