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Finite strain and vorticity analysis base on anticline shape factor (Zagros fold belt, Iran)

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Determination of finite strain and vorticity analysis are important aims in the structural geology to characterize the strain geometry and the partitioning of pure shear and simple shear components in the deformed area. Application of anticlines as strain markers can use to quantifying the strain parameters. In this study we suppose the earth surface as maximum principal finite strain ellipsoid (XZ plane) and the anticlines axial surfaces as XY plane of finite strain. Trend of the Zagros main thrust fault is assumed for reference line and angel between X axis and Zagros main thrust fault is defined the angle. We estimated the finite strain tectonic and the geometry of finite strain ellipsoid with application of Rf-phi and flinn diagram method. Finally we computed the kinematic vorticity number (Wk) of deformation flow and the amount of crustal shortening in the Zagros orogeny belt. The result shows general oblate shape for strain ellipsoid geometry with pure shear dominant component.