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# Strain partitioning along the inclined Zagros transpression zone, Southwestern Iran

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Deformed metamorphic rocks in the Ghouri area are part of the HP-LT Sanandaj Sirjan metamorphic belt within the Zagros orogenic belt. The area provides an opportunity to investigate quantity and orientations of the finite strain (Rs), kinematic vorticity number (Wk), shear sense indicators and geometries and mechanisms of folding. In order to calculate quantitative parameters such as finite strain (Rs) and kinematic vorticity number (Wk), different markers have been used. These include: deformed microfossils, metamorphosed deformed conglomerate, rotated garnet in the garnet schist, k-feldspar in the gneiss and the quartz c-axis fabrics (LPO). All of these markers have record Rs and Wk intensities during deformation in high strain zone. Structural, finite strain and vorticity analyses indicate the strain partitioning during deformation in the area. Two major domains of transpressional deformation have been recognized from northwest to southeastern part of the area. The bulk strain and the simple-shear components increase northward. Strain partitioning during the deformations especially during D2 (transpressional deformation) caused more intensity of finite strain and kinematic vorticity number in the southeast area. The role of thrusts in this region which poses weakness on the southeast area is significant with less spatial distribution and fluctuation of lineation and foliation with respect to the northeast area. Presence of the several thrusts and shear zones which is related to the Zagros thrust system, severely deformed southeast area witch consequently have increased the vorticity in comparison with the northwest area. Strain heterogeneity during the deformations in this region caused that adjacent area with different structural characteristics. These include differences in geometry of fold the styles, crenulation cleavages orientations, orientations of quartz c-axis lattice-preferred orientations (LPO).