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Vorticity analysis and strain geometry of deformed conglomerate, Sanandaj_Sirjan metamorphic belt Iran

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Several methods are used to determine the tectonic finite strain of deformed conglomerate and pebbles of the Dehvazir area in south western Iran. This conglomerate is part of the Sanandaj-Sirjan paired metamorphic belt. Homogeneous coaxial and non-coaxial deformation and the strong preferred orientation of pebbles long axis are due to convergence orogenic movement. The Rf/ thechnique for tow dimensional strain analysis show that the finite strain of X/Z plane is highest (Rs ≈5.2) in comparison to X/Y and Y/Z aspect ratio. The calculation of harmonic mean from axial ratio of extracted pebbles and transfer this data onto Flinn diagram determine (K ≈ 0.4 to 0.9) and (K ≈1.1 to 1.9). The varying prolate ellipsoid shapes and oblate shapes are not due to strain heterogeneities but are due to, its initial shape and initial orientation in the area. Kinematic vorticity analysis of deformed pebbles shows that (Wk) parameter varies from 0.46 to 0.73. These amounts of Wk show that both simple and pure shear act in this area. Application of (Wk/shear type) diagram determine the percent of pure and simple shear so that (30%<simple shear<51%) and (49%<pure shear<70%).