

FINITE STRAIN MEASUREMENTS AND DEFORMATION PATH FROM DEFORMED RADIOLARITE IN THE METAMORPHIC ROCKS, SOUTH WESTERN IRAN

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Deep sea sediments and radiolarite has undergone plane strain, coaxial deformation and metamorphism due to Late Cretaceous orogeny. The deep sea sediments which is metamorphosed up to greenschist facies condition is as an inner part of the Sanandaj-Sirjan HP-LT and HT-LP paired metamorphic belts which stretch NW-SE along the Zagros Thrust.

Orthogonal sectioning of samples made parallel to cleavage plane, perpendicular with the cleavage plane and normal to the first and second face were made and the long intermediate and short axes of deformed fossils, a, b and c were carefully measured. Fossils aspect ratios, a/b, a/c and b/c were calculated. The finite strain associated with the orogeny in the Chah-Sabz south western Iran, is recorded by deformed

radiolarite, using several methods such as R_f/ϕ and Fry methods. The obtained finite strain is highest for the a-c plane which recorded $R_s=2.7-3.0$. The lowest obtained finite strain is $R_s=1.4-1.9$ for b-c plane. The recorded R_s for a-b plane is 1.6-2.55. In order to record more accurate R_s , the harmonic mean, arithmetic mean and geometric mean of R_f data is calculated. Plotting these values in the logarithmic strain graph show that tectonic strain is oblate triaxial ellipsoids ($k = 0.85 \pm 0.164$). This is resulted from radiolarite a-axis progressive rotation toward sub-parallelism to parallelism to the direction of maximum extension direction (S_1) with the NW-SE stretched paired metamorphic belt along the Central Iranian continental boundary.