

**Kinematic Analysis of Folds Within the Chail Rocks of Garhwal Himalaya (India)**

TALK

**B.C. JOSHI\*, V.K. SINGH\* & P.S. SAKLANI\***

The rocks of the Chail Group consists of schists, metabasics and migmatites in Pokheri area of the Garhwal Himalaya is tectonically bounded by the Jutogh Thrust (MCT II). The rocks exhibit  $F_1$ ,  $F_2$  and  $F_3$  folds formed by  $D_1$ ,  $D_2$  and  $D_3$  phases of deformation respectively. The flattening percentage, homogeneous strain ratio, shortening percentage and relationship of wavelength/amplitude ratio of these mesoscopic folds were determined with respect to the Jutogh Thrust (MCT II). The kinematic analysis of mesoscopic folds demonstrates that the amount of flattening of  $F_2$  folds was maximum near the thrust but it gradually decreased away from the thrust.

The  $F_2$  (syn-tectonic) folds developed near the Jutogh Thrust (MCT II) were marked by higher values of flattening from 50 to 85%, shortening from 50 to 70%, apparent strain ratio from 0.1 to 0.25 and low attitudes of quarter wavelength/amplitude ratio from 0.26 to 0.40. Whereas away from the thrust the flattening ranges from 20 to 50%, shortening from 30 to 45%, apparent strain ratio from 0.25 to 0.65 and quarter wavelength/amplitude ratio from 1.25 to 2.25.  $F_2$  folds produced due to  $D_2$  phase (syn-tectonic) show higher intensity of deformation than  $F_1$  and  $F_3$  folds produced by  $D_1$  phase (pre-tectonic) and  $D_3$  phase (post-tectonic) of deformation. The  $D_2$  phase of deformation was related to formation of the Jutogh Thrust (MCT II).

---

\*) Department of Geology, University of Delhi, Delhi - 110 007, India