DEFORMATION MECHANISMS IN A POLYPHASIC TERRAIN: EXAMPLE OF SERIDÓ BELT, NORTHEASTERN BRAZIL

1ARAÚJO, M. N. C., 1ALVES DA SILVA, F. C. 1Universidade Federal do Rio Grande do Norte, Natal, Brazil

A microstructural analysis in the Seridó Belt rocks, revealed two sets of microstructures characteristic of different deformation mechanisms. These structures were correlated to the regional tectonic events D2/M2 and D3/M3 that reached different PT conditions.Along D2 tectonites, formation of subgrain and grain boundary migration of quartz and feldspar is the most expressive microstructure. Formation of core-mantle and bulging in feldspar and quartz grains are also observed. Microscopic evidences along these tectonites has shown that recovery process had been reached essentially by intracristaline deformation.The D3 tectonites underwent a competition between intracristaline deformation and mass transfer diffusion. Microstructures showing the competition of such mechanisms are subgrain-rotation, grain boundary-migration, pressure solution, etc. These structures occur in different sites with reference to D3 shear zones transsecting the Seridó Belt. Far from the shear zones the formation of subgrain by rotation seems to be predominant. Close to the shear zones grain boundary-migration is much more strong, sometimes developing bulging structures. On the shear zones, fluid activity trigges pressure solution, outlined by overgrowth in garnet, quartz and feldspar, pressure shadows in garnet, cordierite and feldspar. The analyzed microstructures suggest that the Seridó Belt polyphasic evolution was settled by a variety of deformation mechanisms. PT conditions and fluid flow activity in each moment will determine a predominance or not of a particular mechanism.