

The Paraíba do Sul megashear zone: evidences of regional displacement

¹PIRES F.R.M. and ¹DAYAN H. ¹DEGEO/UFRJ, Brazil.

The Paraíba do Sul megashear is a major structural feature in the SE part of Brazil. It controls the Paraíba do Sul River, and cuts gneissic rocks, formed under granulite-amphibolite facies retrograded to the biotite zone. Its influence area covers a surface of about 15,000 sq. km. radar imagery and field work reveals a right-lateral fault, with separation of tens of km, considering the displacement of manganese mineralizations, marble lenses and structural analyses. The central part of the megashear is made of a vertical, 4 km thick, mylonitic zone with numerous orthoclase bearing granite gneiss in lenticular bodies within biotite sillimanite almandine gneiss, charno-enderbites, quartzites and squeezed gondite and carbonate lenses. In the NE end of the structure (Piranga and Doce river valleys) the foliation of the gneiss trends 10 to 30° E and some of the Mn deposits aligned along the trend of the displaced splays, reveal a slight decrease in metamorphic grade. At the SW end (Bananal-Angra dos Reis area) the flat lying gneiss, also containing numerous metric bodies of gondite and marble, dips 10 to 25° NW. The strong and consistent nearly horizontal, stretching lineation and kinematic indicators also support the nature of the movement and its intimate relationship with the retrograde metamorphism. The divergent character of the megashear, along with other structural indicators suggest the existence of pop ups probably responsible for the uprising of deep seated granite and the flat lying gneisses in the symmetrically disposed splays.