Neoproterozoic transpressional development of Southern Brasilia belt during the Western Gondwana collage

[1]VALERIANO, C.M.; [2]SIMÕES, L.S.A. and [1]ALMEIDA, J.C.H.
[1]*TEKTOS* Faculty of Geology, Rio de Janeiro State University, RJ, Brazil; 2- DMP São Paulo State University, Rio Claro, SP, Brazil

The southern Brasilia belt is related to the collision of the Paraná (and Rio de la Plata?) and São Francisco paleocontinental blocks, during the Brasiliano orogeny (ca. 620-580 Ma). The kinematics of resulting deformational history was strongly controlled by the NW-SE outline of the original continental passive margin of the southern portion of the São Francisco paleocontinent, as inferred from gravimetric data. The EW-directed collision blocks against the NW-SE São Francisco continental margin resulted in sinistral oblique convergence regimes, which persisted from deeper to relatively shallow crustal levels. The oblique convergence history initiated with syn-metamorphic low-angle progressive shear and development of three main thin-skinned style nappe systems (Araxá, Passos and Luminárias), locally bounded by sinistral ESE trending lateral ramps. Within each nappe system, lateral constriction driven by the transpressional regime led to the formation of syn-metamorphic recumbent oblique folds. Thrust-stacking led to the development of the Samburá foreland-basin, in front of the Passos nappe system. Reaching shallower crustal levels, thrust stacking ceased triggering the brittle-ductile reactivation of the previously formed lateral ramps, with associated steep post-metamorphic peak folding. During the terminal deformational stage, brittle movement is recorded along the ESE-trending shear zones, in association with N-S trending steep folding, still in a sinistral transpressive framework. The timing of post-collisional cooling of the belt is given by the youngest K-Ar dates on micas, around 580-560 Ma.