THE PHLOGOPITE-SPINEL-SAPPHIRINE-BEARING AL-MG GRANULITES FROM SALVADOR-CURACA BELT, BAHIA, BRAZIL: AN EXAMPLE OF ULTRAHIGH - TEMPERATURE METAMORPHISM WITH PHLOGOPITE STABILITY.

LEITE,C.M.M. 1; BARBOSA,J.S.F. 1; SABATÉ,P. 2 ; NICOLLET,C. 3; KIENAST, J.R. 4. 1CPGG/UFBA, Bahia, Brazil; 2 ORSTOM/IRD/ISTEEM, Montpellier, France; 3Université Blaise Pascal, Clermont-Ferrand, France; 4Universités Paris VI/VII, Paris, France

The Salvador-Curaca Belt contains granulitic supracrustal rocks which include Al-Mg granulites where sapphrine (Spr) with inclusions of spinel (Spl1), biotite/phlogopite (Bt1), K-feldspar (Kfs1) and cordierite (Cd1) is highlighted. The sapphrine crystals are armored by large crystals of orthopyroxene (Opx1). Such texture records the prograde-peak-metamorphic reaction: Spl1+Bt1+Kfs1+Crd1 = Spr+Opx1 +liquid. Garnet (Grt) occurs as porphyroblasts that contain inclusions of sapphrine and biotite. The garnet formation by the reacting out of sapphrine and biotite has not been yet described by current studies in KFMASH/ FMAS systems. The garnet is surrounded by an fine - grained symplectites of cordierite (Crd2), orthopyroxene (Opx2) and spinel (Spl2). These textures support descompression reactions: Grt+Spr = Crd2+Opx2+Spl2. Larger flakes of biotite/phlogopite (Bt2) form symplectits with quartz around orthopyroxenes, garnets and spinels when these are in contact with K-feldspars. Such intergrowths correspond to retrograde cooling reactions: Grt or Opx or Spl+Kfs+vapour = Bt2+Qtz. The succession of parageneses indicates a clockwise P-T-t path in KFeMASH system with descompression and cooling processes from peak conditions of about 950-1000ºC and 10-11 kbar during the Transamazonian orogeny. The presence of biotite/phlogopite during the whole P-T evolution suggests a high XF and XMg contents in these mica which could be responsible for its stability at ultrahigh metamorphic conditions.