

## **P-T PATHS OF SHEAR ZONES SEPARATING HIGH-GRADE TERRAINS FROM CRATONS IN KOLA PENINSULA (RUSSIA) AND LIMPOPO AREA (SOUTH AFRICA)**

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P-T EVOLUTION OF MICA SCHISTS FROM TWO REGIONAL SCALE TECTONIC (SHEAR) ZONES THAT SEPARATE HIGH GRADE TERRAINS (MOBILE BELTS) FROM CRATONS ARE DESCRIBED. THESE ARE THE 2.4 - 1.9 GA TANAELV BELT (TB), A SUTURE ZONE THAT SEPARATES THE LAPLAND GRANULITE COMPLEX (LGC) FROM THE KARELIAN CRATON (KOLA PENINSULA-FENNOSCANDIA), AND THE 2.69 GA HOUT RIVER SHEAR ZONE (BELT) THAT SEPARATES THE 2.9 GA KAAPVAAL CRATON FROM THE 2.69 GA SOUTH MARGINAL ZONE OF THE LIMPOPO HIGH-GRADE TERRAIN (SOUTH AFRICA). THE 1.9 GA KORVA TUNDRA GROUP OF THE TB IS COMPOSED OF CHL+ST SCHISTS OVERLAYING GNEISSES OF THE KARELIAN CRATON AND KY-BT ROCKS UNDERLYING GARNET AMPHIBOLITES OF THE TB, WHICH ARE IN TECTONIC CONTACT WITH THE LGC. THE ROTATED GARNET PORPHYROBLASTS IN THESE ROCKS CONTAIN NUMEROUS INCLUSIONS (OTZ, CHL, MS), AND SHOW CLEAR MG/FE CHEMICAL ZONING THAT RECORDS BOTH THE PROGRADE AND RETROGRADE HISTORY. A PEAK OF METAMORPHISM AT  $T = 650^{\circ}\text{C}$  AND  $P = 7.5 \text{ KBAR}$  IS RECORDED IN THE KY-BT ZONE AND CHARACTERIZED BY SNOWBALL GARNET. A MINIMUM OF METAMORPHIC CONDITIONS ALONG THE RETROGRADE PT-PATH ARE  $T = 530^{\circ}\text{C}$  AND OF  $P = 5 \text{ KBAR}$ . THE HOUT RIVER SHEAR ZONE (SOUTH AFRICA) SHOWS METAMORPHIC ZONATION FROM GREENSCHISTS THROUGH EPIDOTE AMPHIBOLITES TO GARNET AMPHIBOLITES. RARE STRONGLY DEFORMED MICA SCHISTS (CHL+GRT+PL+MS+BT +QTZ ) RECORD A PROGRADE P-T PATH WITH A PEAK OF  $T = 600^{\circ}\text{C}$  AND  $P \sim 5.5 \text{ KBAR}$ . THE RETROGRADE STAGE IS DOCUMENTED BY THE REACTION  $\text{PRP} + 2\text{MS} + \text{PHL} = 6\text{QTZ} + 3\text{EAST}$  RECORDING A MINIMUM  $T = 520^{\circ}\text{C}$  AND  $P \sim 3.3 \text{ KBAR}$ . NARROW CLOCK-WISE P-T LOOPS RECORDED IN MICA SCHISTS FROM BOTH STUDIED SHEAR ZONES ARE VERY SIMILAR ONE TO EACH OTHER SUGGESTING SIMILARITY IN GEODYNAMIC HISTORY OF BOTH SHEAR ZONES UNDER CONSIDERATION.