

## **P - T EVOLUTION OF THE ULTEN ZONE, UPPER AUSTRALPINE, EASTERN ALPS, ITALY.**

1 MORTEN L.1 - Dip. Scienze della Terra e Geologico- Ambientali, Bologna Italy

The Ulten zone belongs to the Tonale nappe that is part of the Austroalpine nappe system. It forms a NNE-striking fault-bounded belt of about 12 km long and 2 km wide. It is formed of Grt-Ky gneiss, orthogneiss and migmatites with included eclogitic metabasites and small bodies of Spl- and Grt-bearing and Grt-free peridotites. The peridotites carry Grt-pyroxenite dikes/veins. The ultramafic rocks record an unusual P-T history: high-T (~ 1200°C, ~ 1.5 Gpa) mantle-wedge Spl-lherzolites were intruded by hot (1400°C), hydrous melts that formed the pyroxenites; a cooling (1100°C) at essentially constant P was followed by a cooling down to ~ 850°C accompanied by a P increase (2.7 - 2.8 Gpa). The physical conditions of a subsequent more or less isothermal (630° T 810°C) decompression (1.2 P 2.0) match those calculated for the metamorphic peak of the gneisses and migmatites (~ 1.5 Gpa, 600° T 850°C) and the mafic rocks (1.4 Gpa, 640° T 700°C). A retrogression stage down to 0.6 - 0.8 Gpa and 600°C T 700°C and 0.3 - 0.9 Gpa and T 650°C have been estimated for the metapelites and metaperidotites, respectively. A geodynamic scenario involving subduction, accretion, collision and exhumation has been envisaged to account the suggested P - T path.