

## **U-PB ZIRCON GEOCHRONOLOGY MADE IN MEXICO: AN EXAMPLE FROM THE GRENVILLIAN OAXACAN COMPLEX.**

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The Oaxacan Complex (OC) is the largest exposure of Grenvillian rocks in Mexico, characterized by granulite facies metamorphism and intense ductile deformation. This is the first attempt to characterize some units of the Northern OC, using U-Pb zircon geochronology and trace elements geochemistry, and the first report of U-Pb geochronology data completely realized in Mexico, in the Laboratorio Universitario de Geoquímica Isotópica (LUGIS) of the National Autonomous University of Mexico. Isotopic ratios were measured with a Finnigan MAT 262 mass spectrometer equipped with an ion counting system. Common Pb measured blanks were less than 30 pg. We analyzed three orthogneisses and two syntectonic pegmatites. Trace element data suggest that the metasyenite is arc related, whereas banded charnockite and gar-cpx bearing mafic gneiss have a within plate signature and are genetically associated with an anorthosite-gabbro complex constituting the structural base of the sequence. The metasyenite yielded a nearly concordant age of ~ 1,100 Ma, whereas both charnockite and gar-cpx bearing mafic gneiss yielded concordant ages of 988 and 995 Ma respectively. The two pegmatites yielded the oldest a  $^{207}\text{Pb}^*/^{206}\text{Pb}^*$  age of  $1,069 \pm 16$  Ma, interpreted as the age of ductile, amphibolite to granulite facies shearing; the youngest a concordant age of 978 Ma that represents the age of the peak granulite metamorphism. These geochronologic data allow correlation of the OC with other Mexican, North and South American Grenvillian terranes, providing a framework to better understand the tectonic evolution of these areas and their role in assembly and break-up of the Rodinia supercontinent.