Use of TOF-SIMS and MEV in mineral investigation. - Internal structures of grains of zircon samples from the Intrusive Complex Ibituba-Itapina, MG. Preliminary Results.

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This work shows new results from the Intrusive Complex Ibituba-Itapina, part of the Magmatic Arch Espírito Santo. The relationship between the intrusive suites of this Complex were already thoroughly defined in previous works. On the other hand the age of intrusion processes and the degree of the interaction between the different rocks has not yet been well explained.

To solve these questions, the zircons of representative samples of the rockssuites of the Intrusive Complex were separated and bipolished thinsections were prepared for the examination with " Time of Flight Secondary Ion Mass Spectrometry " (TOF-SIMS) and Electron Microscopy (MEV):

a. Typical zircons in the bipolished thinsections were selected with respect to their internal structure. The used equipment was a CAMECA TOF-SIMS IV.

b. A parallel examination was carried out on the morphology of individual grains of zircons, using an electron microscope.

The results:

1. It was possible to verify that either zoned or homogeneous crystals exist in the magmatic suites. Some have peculiar nucleii. This distribution of them allows the assignment of genetic connections between the suites of the Intrusive Complex.
2. The structure of a number of zircons, nuclei or central heterogenities surrounded by zoned rims, show that they are aquired from the protolith.
3. Most of the zircons are rounded or etched which is one more argument for the anatetic formation of the magmas.
4. Using the morphology and internal structure of the zircons, it was possible to confirm a sequence of age and genetic between the suites.