Chronus: A new LA-ICPMS U-Pb data reduction program

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During the last decade, LA-ICPMS has been increasingly used to investigate U-Pb ages of U-bearing minerals, due to its high/moderate spatial resolution, minimal sample preparation, low cost and rapid analysis time [1] [2].

Chronus is a data reduction program for U-Pb data which has been developed based on the experience of researches of the Geochronology Laboratory of the University of Brasília (UnB). It was designed to handle data obtained using the method and equipment described by Bühn *et al* [3]. Chronus is an open source program that may be updated on demand to serve other research groups from the scientific community who employ different methods and equipment. The program development was carried out using Visual Basic for Application (VBA) programming language in an Excel environment.

All the steps of data reduction are covered by Chronus: data entering and checking, blank removal and standard correction. Data processing is based on the analysis time: the program automatically selects which blank (or blanks and standards) should be used to correct the analytical data, although the user is also allowed to select different blank and standard values for data reduction.

A large amount of data can be rapidly reduced, but this depends on the quality of the raw data, otherwise, the user should plot each analysis, seeking and eliminating outliers. Chronus offers an option of automatically plotting the main ratios and mass intensities, as well as a standard deviation test.

Although the program is still being tested, in special its compatibility with different versions of Excel (2007 or earlier), a copy can be sent upon request and any comment or suggestion is welcome.

[1] Košler, J. *et al*. (2002). *Chemical Geology*, **182**:605–618. [2] Schoene, B. (2013). *Treatise on Geochemistry*, 2.Ed. Elsevier, 4:341-378. [3] Bühn, B. *et al*. (2009). *Anais da Academia Brasileira de Ciências*, **81**:1–16.