

TERMITE 2.0 – An R script for data reduction of LA-ICP-MS trace element measurements

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Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS) enables the generation of large quantities of trace element data at high spatial resolution within a short time frame. Fast and efficient data reduction is of great importance to process this vast amount of information. Several commercial programs [1,2] and non-commercial software packages, e.g., [3], for handling LA-ICP-MS trace element data are in use, each having their individual strengths and weaknesses.

Mischel et al. [4] introduced TERMITE, an R script that enables to perform data reduction of spot and line scan measurements. To simplify the application of the algorithm, we have now added a graphical user interface (GUI) to version 2.0. The adjustable parameters are now visualized within different types of menus. Therefore, no previous knowledge of R is necessary to apply the algorithm. Data visualization within the algorithm by several tables and plots simplifies the selection of integration intervals for further processing. All features from the previous version are still included.

The main features of TERMITE 2.0 are that it (1) is open-source software for the reduction of trace element LA-ICP-MS data, (2) has a GUI allowing parameters to be adjusted without prior knowledge of R, (3) can process both spot and line scan analyses, (4) is extremely fast once all required parameters have been defined, (5) can use multiple reference materials at the same time for calibration, and (6) is particularly useful for large datasets from samples that are homogeneous with respect to their major element composition. TERMITE 2.0 can be obtained free from <https://www.blogs.uni-mainz.de/fb09-geosciences/termite/>.

[1] Griffin, W.L. et al. (2008), *Mineral. Assoc. Canada Short Course series* 40, 308-311. [2] Hellstrom, J.C. et al. (2008), *Mineral. Assoc. Canada Short Course series* 40, 343-348. [3] Guillong, M. et al. (2008), *Mineral. Assoc. Canada Short Course series* 40, 328-333. [4] Mischel, S. et al. (2017), *Rapid Commun. Mass Spectrom.*, 31, 1079–1087.