

Comparing zircon dating methods on natural samples

M. TICHOMIROVA^{1*}, M. HOFMANN², U. LINNEMANN²,
A. KÄSSNER¹, M. OVTCHAROVA³, U. SCHALTEGGER³, S.
SERGEEV⁴, A. VON QUADT⁵, M. WHITEHOUSE⁶

¹ TU Bergakademie Freiberg, Inst. Mineralogy, 09599
Freiberg, Germany (*correspondence:
Tichomir@mineral.tu-freiberg.de)

² Senckenberg Naturhist. Samml. Dresden, Museum für
Mineralogie und Geologie, Königsbrücker Landstr. 159,
01109 Dresden, Germany

³ Department of Earth Sciences, University of Geneva, Rue
des Maraichers 13, 1205 Geneva, Switzerland

⁴ Centre of Isotopic Research at the Russian Geological
Research Institute (VSEGEI), Srednyi Prospect 74,
199106 St. Petersburg, Russia

⁵ Inst. Geochemie und Petrologie, ETH Zurich, Clausiusstr.
25, 8092 Zürich, Switzerland

⁶ Swedish Museum of Natural History, Box 50007,
Stockholm SE-1045, Sweden

10 samples of granites have been dated by the four existing zircon dating methods: zircon evaporation, ion microprobe (SHRIMP/SIM), laser ablation plasma mass spectrometry (LA-ICP-MS), and by the single grain isotope dilution method (CA-ID-TIMS). Some samples were dated in different laboratories by the same method (SHRIMP/SIMS, CA-ID-TIMS). The obtained data are discussed in terms of (i) natural age homogeneity/heterogeneity versus instrumental induced age scatter, (ii) precision, accuracy, and external reproducibility of age data, (iii) the influence of common Pb and (iv) Pb loss for different dating methods.

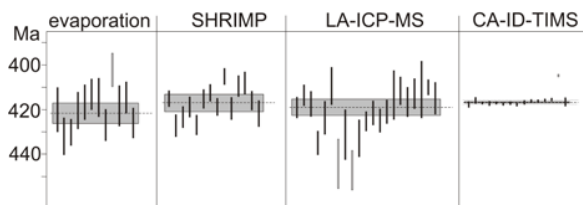


Figure 1: $^{206}\text{Pb}/^{238}\text{U}$ ages of single measurements dated by four different zircon dating methods.