

A method for measuring rapid magnetization change in high field using a pulse magnetizer: A new rock magnetic approach

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Pulse magnetizers have frequently been used in rock magnetic studies for the convenience of the production of high magnetic field without the need for a large electromagnet, enabling the rapid acquisition of isothermal remanent magnetization (IRM) for short (*c.* 10^{-2} sec) period of time. Because the demand for high field is limited as much as 10 T for rock magnetism, the pulse magnetizer can be compact and low-cost, and several commercial systems are available for the purpose of imparting IRM. We propose in this study a new method for measuring the dynamical behavior of magnetization in pulsed high-field, a new cost-effective system comprised of a fast broad-bandwidth digital oscilloscope and a newly designed coil system. We show examples of such dynamical behaviors from a set of natural samples, and discuss these results in comparison with conventional rock magnetic analyses.

Keywords: rock magnetism, pulse magnetic field, magnetic hysteresis