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BEAMS: A New User-Friendly Program for Analyzing μ SR Data

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To support the continued growth of μ SR, it is important to encourage prospective new users by minimizing any barriers to entry to the μ SR community. As with any other scientific approach, one such barrier to entry can be the software tools necessary to extract useful information from the data. Although excellent software options for μ SR currently exist, in our experience, students and other new μ SR practitioners often struggle to learn how to use these tools. For this reason, we have developed BEAMS, a comprehensive, user-friendly computer program for μ SR data analysis designed to complement existing μ SR programs as an accessible entry point into μ SR data analysis. BEAMS is an open-source, python-based graphical program that enables interactive inspection of μ SR data and flexible fitting of mathematical functions to asymmetry spectra through non-linear least-squares optimization. The program currently accepts data from TRIUMF, PSI, and ISIS. The software is available for Windows, Mac, and Linux operating systems through a simple installation procedure. The source code, helpful tutorial videos, and detailed documentation are available at <https://github.com/FrandsenGroup/beams> to help new users take advantage of BEAMS as an easy-to-use tool for analyzing μ SR data.

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