Multiphonon: Phonon Density of States tools for Inelastic Neutron Scattering Powder Data

Jiao Y. Y. Lin *[1] and Max Kresch[2]

[1]linjiao@ornl.gov, Neutron Data Analysis and Visualization Division, Oak Ridge National Lab
[2]mkresch@gmail.com

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1 Summary

The multiphonon python package calculates a phonon density of states from inelastic neutron scattering (see, for example [1]) spectrum from a powder sample. The algorithm is a self-consistent, iterative procedure that finishes when the measured spectrum can be accounted for by the one-phonon scattering, multiphonon scattering, and multiple scattering from the deduced phonon density of states, under the incoherent approximation (Appendix of [2] and Section 6.5 "Calculation of Multiphonon Scattering" of [1]).

*Corresponding author

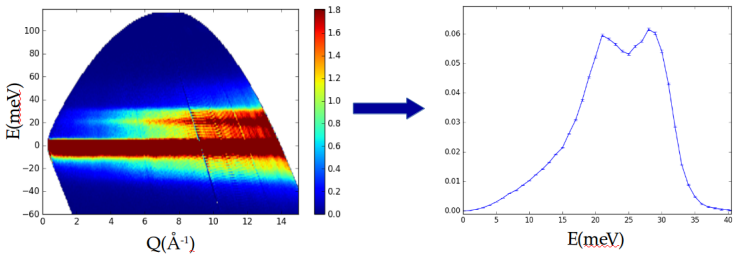

Figure 1: The multiphonon package takes the inelastic neutron scattering spectrum, shown on the left, and produces the phonon density of states shown on the right.

2 Notice of Copyright

3 Acknowledgements

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References

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