

Opacity data for stellar models and its uncertainties

J.E. Bailey¹, T. Nagayama¹, G.P. Loisel¹, G.A. Rochau¹, C. Blancard², J. Colgan³, Ph. Cosse², G. Faussurier², C.J. Fontes³, F. Gilleron², I. Golovkin⁴, S.B. Hansen¹, G. Hazak⁵, C.A. Iglesias⁶, D.P. Kilcrease³, Y. Kurzweil⁵, J.J. MacFarlane⁴, R.C. Mancini⁷, R.M. More⁸, S.N. Nahar⁹, C. Orban⁹, J.-C. Pain², A.K. Pradhan⁹, M. Sherrill³, and B.G. Wilson⁶

1 Sandia National Laboratories, Albuquerque, New Mexico

2 CEA, DAM, DIF, F-91297 Arpajon, France

3 Los Alamos National Laboratory, Los Alamos, New Mexico

4 Prism Computational Sciences, Madison, Wisconsin

5 Nuclear Research Center Negev, Israel

6 Lawrence Livermore National Laboratory, Livermore, California

7 University of Nevada, Reno, Nevada

8 RMorePhysics, Pleasanton, California

9 Ohio State University, Columbus, Ohio

Laboratory experiments that test stellar interior opacity models have been developed over the past fifteen years. Model predictions for iron opacity are notably different from measurements performed at conditions similar to the boundary between the solar radiation and convection zone [J.E. Bailey et al., *Nature* **517**, 56 (2015)]. The measurements help resolve discrepancies between helioseismology and solar models. However, it is essential to understand the difference between opacity model predictions and measurements in order to ensure continued progress in stellar astrophysics. New measurements at the Sandia Z facility with chromium, iron, and nickel are providing a systematic study of how opacity changes with temperature, density, and atomic number. These measurements help further evaluate possibilities for experiment errors and help constrain hypotheses for opacity model refinements.

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