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Updates on iron opacity measurements at solar interior temperature

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Since solar abundance was renewed in 2005, solar models and helioseismology disagree. One hypothesis is that calculated iron opacity used in the solar model is underestimated. In 2015, we measured Fe opacity at solar interior temperatures using Z machine at Sandia National Laboratories and revealed significant disagreement with calculated opacities. If true, it can partially resolve the discrepancy, but the more-than-expected disagreement aroused a controversy in the community. Since then, we performed more than 20 experiments and refined the analysis methods to improve the accuracy of the result. We will present how the iron opacity and its uncertainty changed with the analysis refinements and the increased number of experiments and discuss its impact on the solar problem.

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