

Pitfalls in IBA data analysis (II) - Calculation of uncertainty budget

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Content

One of the advantages of IBA techniques over many other competitive techniques is that quantification can often be made from first principles, leading to claims of high traceable accuracy. However, many published works do not quote uncertainties on the values reported, and when they do, it is very common that the uncertainties quoted reflect only the statistics of the experiment. In fact, statistics is just one source of uncertainty in IBA experiments, and almost always not the most important. The uncertainty budget is specified as a formal approach to the systematic evaluation of the uncertainty of a measurement. It is the statement of a measurement uncertainty, of the components of that measurement uncertainty and of their calculation and combination. The concepts involved will be described with special reference to IBA, and practical examples will be developed, explaining the practical steps of how to calculate realistic uncertainties in IBA.

Summary

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