



Confidence inference for combination of different information sources

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Suppose information concerning a focus parameter ψ is available from several and possibly very different data sources, perhaps in the form of point estimates and confidence intervals. How should these separate pieces of information be successfully combined towards meaningful and precise inference for ψ ? I will discuss a general approach involving first turning confidence interval information into a full confidence distribution, which is then transformed further into profiled log-likelihoods. These are summed across information sources and yields a combined confidence distribution, perhaps after further fine-tuning approximations, depending on the complexity of the different components. Under some conditions this scheme also provides optimal confidence inference. Illustrations for real data problems will be given.

Keywords: combination of information; confidence distribution; optimality; profiled likelihoods.