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On the indirect elicitability of the mode and modal interval

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Abstract

Scoring functions are commonly used to evaluate a point forecast of a particular statistical functional. This scoring function should be consistent, meaning the correct value of the functional is the Bayes act, in which case we say the scoring function elicits the functional. Recent results show that the mode functional is not elicitable. In this work, we ask whether it is at least possible to indirectly elicit the mode, wherein one elicits a low-dimensional functional from which the mode can be computed. We show that this cannot be done: Neither the mode nor a modal interval is indirectly elicitable with respect to the class of identifiable functionals.

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