

A case of combination of evidence in the Dempster-Shafer theory inconsistent with evaluation of probabilities

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The Dempster-Shafer theory of evidence accumulation is one of the main tools for combining data obtained from multiple sources. In this paper a special case of combination of two bodies of evidence with non-zero conflict coefficient is considered. It is shown that application of the Dempster-Shafer rule of combination in this case leads to an evaluation of masses of the combined bodies that is different from the evaluation of the corresponding probabilities obtained by application of the law of total probability. This finding supports the view that probabilistic interpretation of results of the Dempster-Shafer analysis in the general case is not appropriate.

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