

# Likelihood-based imprecise probabilities and decision making

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- ▶ prior ignorance, learning, and (Walley-)coherence are **incompatible**: the above general approach relaxes (Walley-)coherence during learning

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- ▶ the two steps of likelihood-based IP learning and IP-based decision making taken together can be interpreted as **likelihood-based decision making** (Cattaneo, 2007, 2012): in particular, the  $\Gamma$ -maximin criterion corresponds to the LRM (Likelihood-based Region Minimax) criterion

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- ▶ but **only** the  $\Gamma$ -maximin criterion (i.e., the LRM criterion) leads to decisions satisfying **efficiency** (under regularity conditions): i.e., the above convergence is as fast as possible



## references

- ▶ Antonucci, Cattaneo, and Corani (2012). **Likelihood-based robust classification with Bayesian networks**. In: *Advances in Computational Intelligence*, Part 3, Springer, pp. 491–500.
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