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**A probabilistic extension of intuitionistic logic.** (English) Zbl 1022.03011

Math. Log. Q. 49, No. 4, 415-424 (2003).

Summary: We introduce a probabilistic extension of propositional intuitionistic logic. The logic allows for making statements such as  $P_{\geq s}\alpha$ , with the intended meaning “the probability of truthfulness of  $\alpha$  is at least  $s$ ”. We describe the corresponding class of models, which are Kripke models with a naturally arising notion of probability, and give a sound and complete infinitary axiomatic system. We prove that the logic is decidable.

**MSC:**

[03B48](#) Probability and inductive logic

[03B25](#) Decidability of theories and sets of sentences

[68T37](#) Reasoning under uncertainty in the context of artificial intelligence

Cited in **8** Documents

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[probabilistic logic](#); [intuitionistic logic](#); [completeness](#); [decidability](#)

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