研究室名	上出哲広研究室　論文発表

題名	Inconsistency-tolerant hierarchical probabilistic CTL model checking: Logical foundations and illustrative examples
掲載雑誌	International Journal of Software Engineering and Knowledge Engineering 32 (1), pp. 131-162, World Scientific, 2022.
著者	Norihiro Kamide（上出哲広研究室）
概要	In this study, an inconsistency-tolerant hierarchical probabilistic computation tree logic (IHpCTL) is developed to establish a new extended model checking paradigm referred to as inconsistency-tolerant hierarchical probabilistic CTL model checking (IHpCTL model checking for short), which is intended to verify randomized, open, large, and complex concurrent systems. The proposed IHpCTL is constructed based on several previously established extensions of the standard probabilistic temporal logic known as probabilistic computation tree logic (pCTL), which is widely used for probabilistic model checking. IHpCTL is shown to be embeddable into pCTL and is relatively decidable with respect to pCTL. This means that the decidability of pCTL with certain probability measures implies the decidability of IHpCTL. The results indicate that we can effectively reuse the previously proposed pCTL model-checking algorithms for IHpCTL model checking. Moreover, in this study, some new illustrative examples for clinical reasoning verification are addressed based on IHpCTL model checking.
関連画像	