Linear Temporal Logic with Standpoint Modalities

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───── **Abstract** ─────

Standpoint logics have been introduced in recent work by Alvarez et al. as a multi-modal logic to reason about the integrated knowledge of multiple agents that might have different, possibly contradicting views ("standpoints"). The essential new feature are modalities for expressing that a property is conceivable according to the view of an agent. The talk considers the model checking problem for a standpoint extension of classical linear temporal logic (LTL) with five semantics for the standpoint modalities. The semantics differ in the information an agent can extract from the history. Starting with a generic non-elementary model checking algorithm that is applicable to all five semantics, a more detailed complexity analysis leads to improved upper bounds for four of the semantics. In three cases, the model checking problem turns out to be PSPACE-complete, i.e., not harder than the model checking problem for classical LTL, which stands in contrast to the known EXPSPACE-completeness result for the satisfiability problem for standpoint LTL.