

Proofs with modality: challenges and perspectives

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This talk is an invitation to revisit the proof theory of FOMTL in the light of advances in sequent calculi for modal and first order logic. Cyclic and ill-founded proofs provide a versatile grounding for the study of logics of recursive and/or co-recursive concepts. We survey some of the advantages offered by this notion of proof in the form of streamlined soundness and completeness arguments for modal and temporal logics and their applications to interpolation and proof search.