(Algebraic) proof theory for substructural logics and applications

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Substructural logics are axiomatic extensions of full Lambek calculus. They encompass, among many others, classical, intuitionistic, intermediate, fuzzy, and relevant logics. In my talk I will outline some results towards a uniform and systematic introduction of analytic calculi for substructural logics. Our main methodology is a new integration of proof theoretic and algebraic techniques (*algebraic proof theory*), developed together with N. Galatos and K. Terui [3–6]. The introduced calculi are then used to provide uniform proofs of standard completeness for large classes of logics, that is completeness with respect to algebras based on truth values in $[0, 1]$, see [1, 2, 7, 8].

References

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