Analytic calculi for intermediate logics: A nested sequent approach

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Recent years have seen great achievements in the field of algebraic proof theory, in particular concerning the general construction of analytic sequent or hypersequent calculi for large classes of modal and intermediate logics [CGT08, CGT12]. However a number of interesting examples of intermediate logics do not fall into this class, with prominent examples including, e.g., the logics bd_k, characterised by Kripke frames of depth bounded by k. In some cases such logics can still be treated in the hypersequent framework using ad hoc constructions of hypersequent calculi [CMS13], calculi which are not cut-free but nevertheless could be considered analytic in the wider sense [BGL16], or structural modifications of the hypersequent framework [CF00].

However, the hypersequent framework is not the only structural extension to Gentzen's original sequent framework suitable for capturing more challenging logics. An alternative is provided by the framework of *nested sequents*, already successfully applied to a variety of modal logics [Brü09] and adapted to intuitionistic logic in [Fit14]. In this talk we are going to investigate a semantically motivated modification of this approach towards nested sequent calculi for intermediate logics.

References

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