

A Dialectica Model of Relevant Type Theory

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Relevant logics are a family of substructural logics, developed by Anderson-Belnap and collaborators, whose basic tenant is that in logical implications antecedents and consequents should be relevantly connected. Dialectica models are sophisticated categorical models of Girard's Linear Logic, conceived as an internal description of Gödel's Dialectica Interpretation. Dialectica models (also called Dialectica spaces) have proved themselves precise (capable of distinguishing all the connectives proposed in the logic) and versatile (have been used in diverse applications such as modelling Petri nets, modelling the Lambek calculus, explaining proofs between cardinalities of the continuum, explaining compiler refinements, etc). In this talk we want to show that Dialectica spaces can be used to model a version of relevant type theory and its logic and discuss how well this modelling works.