CENTRO DE MATEMÁTICA E APLICAÇÕES FUNDAMENTAIS

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SEMINÁRIO DE LÓGICA MATEMÁTICA

Dia 12 de Junho (quinta-feira), às 15 horas, na Sala B3-01

Display Logic - a short introduction

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Abstract:

With the invention of *display logic* Nuel Belnap provided a uniform way to build up Gentzen-style consecution (i.e. sequent) calculi for a wide variety of different logics. These calculi are modular, i.e. there is a sharp separation between structural rules on the one hand and logical rules, which govern the introduction of logical connectives, on the other; additionally, the rules for one connective do not refer to other logical connectives. If these calculi enjoy eight easily checked properties, they fall under the scope of a general cut-elimination theorem, that can be proved "essentials-only" (as Belnap himself remarks, cf. [2, p. 80]). Further they enjoy the name giving display-property: It is always possible to 'make' any substructure of a given consecution 'the subject' of an equivalent consecution using only the display rules alone, i.e. the consecution can be transformed so that the substructure is either the entire antecedent or the entire consequent of the resulting consecution. This later feature expressed in algebraic terms corresponds to residuation.

In this talk I will give a short introduction into the subject focussing on classical propositional logic. I will start by explaining how Belnap takes up Gentzen's main ideas, modifies and in part generalizes them – and of course present some example deductions.

References

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