

Adequation lemma for full propositional classical logic

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This paper gives a proof of an adequation lemma for full propositional classical logic written in the natural deduction system. By full we mean that all connectives, in particular \vee , are present. We also consider the three reduction relations (logical, commutative and classical reductions) necessary for the subformula property. The corresponding calculus (denoted by $\lambda\mu^{\rightarrow\wedge\vee}$ -calculus) enjoys the standard following properties: subject reduction, confluence and strong normalization. The semantics that we introduce is an alternative of the reductibility candidates used by M. Parigot to prove the strong normalization property of the second order typed $\lambda\mu$ -calculus. We also deduce operational characterizations of closed terms with type: the intuitionistic absurdity law, the excluded third, and the Pierce's law.