

Hyper Natural Deduction

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We introduce Hyper Natural Deduction as an extension of Gentzen's Natural Deduction system by communication like rules. The motivation is to obtain a natural deduction like system which is equivalent to Avron's Hypersequent Calculus for Gödel-Dummett Logic, and which permits natural conversion rules for normalisation as an extension of the well-known conversion rules for Natural Deduction. The ultimate goal of this project is to establish a Curry-Howard correspondance to some (yet to be found) model of parallel computation. An additional aim is to shed further light on Avron's suggestion [in A. Avron: Hypersequents, Logical Consequence and Intermediate Logics for Concurrency. *Annals of Mathematics and Artificial Intelligence*, 4(1991), 225-248] that a hypersequent can be thought of as a multiprocess.

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