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Abstracts of Short Communications and Posters

Section:

1. Logic

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Hierarchy Based on Inductive Definitions
Let Q be an inductive operator on ω. The stages of the inductive definition determined by Q are
$Q_\sigma(x) \leftrightarrow (\exists\tau < \sigma) Q(Q_\tau, x)$.
We define a hierarchy of sets of natural numbers as follows: A relation P is $I_{\rho\sigma}$ if P is many-one reducible to Q_σ where Q is Σ^0_ρ, and P is $J_{\rho\sigma}$ for a successor ordinal σ if P is many-one reducible to Q_σ where Q is Π^0_ρ.
This hierarchy is an extension of the hyperarithmetic hierarchy that extends at least as far as the closure ordinal for Δ^1_1 inductive definitions, and it has an additional advantage of not being dependent on ordinal notations.