Urbas, Igor

Dual-intuitionistic logic. (English) ‖Zbl 0869.03008‖

Summary: The sequent system **LDJ** is formulated using the same connectives as Gentzen's intuitionistic sequent system **LJ**, but is dual in the following sense: (i) whereas **LJ** is singular in the consequent, **LDJ** is singular in the antecedent; (ii) whereas **LJ** has the same sentential counter-theorems as classical **LK** but not the same theorems, **LDJ** has the same sentential theorems as **LK** but not the same counter-theorems. In particular, **LDJ** does not reject all contradictions and is accordingly paraconsistent. To obtain a more precise mapping, both **LJ** and **LDJ** are extended by adding a "pseudo-difference" operator $\dot{-}$ which is the dual of intuitionistic implication. Cut-elimination and decidability are proved for the extended systems $\mathbf{LJ}^-$ and $\mathbf{LDJ}^-$, and a simply consistent but ω-inconsistent Set Theory with Unrestricted Comprehension Schema based on **LDJ** is sketched.

MSC:

03B20	Subsystems of classical logic (including intuitionistic logic)
03F05	Cut-elimination and normal-form theorems
03E70	Nonclassical and second-order set theories

Cited in **2** Reviews
Cited in **20** Documents

Keywords:

duality; pseudo-difference; cut-elimination; sequent system **LDJ**; Gentzen's intuitionistic sequent system **LJ**; dual of intuitionistic implication; decidability; Set Theory with Unrestricted Comprehension Schema

Full Text: DOI

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