

情報電子工学科工学科 論文発表

題名	Gentzen-type sequent calculi for extended Belnap-Dunn logics with classical negation: A general framework
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概要	<p>Gentzen-type sequent calculi $GBD+$, $GBDe$, $GBD1$, and $GBD2$ are respectively introduced for De and Omori's axiomatic extensions $BD+$, BDe, $BD1$, and $BD2$ of Belnap-Dunn logic by adding classical negation. These calculi are constructed based on a small modification of the original characteristic axiom scheme for negated implication. Theorems for syntactically and semantically embedding these calculi into a Gentzen-type sequent calculus LK for classical logic are proved. The cut-elimination, decidability, and completeness theorems for these calculi are obtained using these embedding theorems. Similar results excluding cut-elimination results are also obtained for alternative Gentzen-type sequent calculi $gBD+$, $gBDe$, $gBD1$, and $gBD2$ for $BD+$, BDe, $BD1$, and $BD2$, respectively. These alternative calculi are constructed based on the original characteristic axiom scheme for negated implication.</p>