

情報電子工学科 論文発表

題名	Cut-free systems for restricted bi-intuitionistic logic and its connexive extension
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概要	In this paper, a cut-free Gentzen-type sequent calculus RBL for a restricted version of bi-intuitionistic logic is introduced as an alternative to a non-cut-free Gentzen-type sequent calculus BL for bi-intuitionistic logic. RBL is obtained from BL by imposing some restrictions to the implication-right and co-implication-left rules. RBL is a conservative extension of some Gentzen-type sequent calculi for intuitionistic and dual-intuitionistic logics. Syntactic dualities of RBL and its subsystems are also shown. Moreover, a Gentzen-type sequent calculus RBCL for a restricted version of bi-intuitionistic connexive logic, which is regarded as a variant of paraconsistent four-valued logics, is obtained from RBL by adding some initial sequents and logical inference rules for a paraconsistent negation connective. The cut-elimination theorem for RBCL is also proved using a theorem for embedding RBCL into RBL.