情報電子工学科工学科　論文発表

題名	Extending paraconsistent quantum logic: A single-antecedent/succedent system approach (Mathematical Logic Quarterly, Wiley-vch Verlag, Published online first, 2018)
掲載雑誌	Mathematical Logic Quarterly, Wiley-vch Verlag, Published online first, 2018.
著者	Norihiro Kamide
概要	In this study, some conservative extensions of paraconsistent quantum logic, such as Nelsonian, modal, infinitary and temporal, are investigated by extending a single-antecedent/succedent sequent calculus PQL for paraconsistent quantum logic. A sequent calculus NQL, which is obtained from PQL by adding implication and co-implication, is introduced as a variant of Nelson's paraconsistent four-valued logic. Sequent calculi MPQL, IPQL and TPQL are introduced, respectively, as modal, infinitary and temporal extensions of PQL. The cut-elimination and duality theorems for these calculi are proved, and some extended calculi including NQL and MPQL, as well as their fragments, are shown to be decidable. A theorem for embedding NQL into its negation-free fragment and a theorem for embedding TPQL into IPQL are proved.