情報電子工学科　論文発表

題名	Bunched sequential information
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概　要	It is known that the logic BI of bunched implications is a logic of resources. Many studies have reported on the applications of BI to computer science. In this paper, an extension BIS of BI by adding a sequence modal operator is introduced and studied in order to formalize more fine-grained resource-sensitive reasoning. By the sequence modal operator of BIS, we can appropriately express "sequential information" in resource-sensitive reasoning. A Gentzen-type sequent calculus SBIS for BIS is introduced, and the cut-elimination and decidability theorems for SBIS are proved. An extension of the Grothendieck topological semantics for BI is introduced for BIS, and the completeness theorem with respect to this semantics is proved. The cut-elimination, decidability and completeness theorems for SBIS and BIS are proved using some theorems for embedding BIS into BI.