

1103-68-107

**Jérôme Fortier\*** ([jerome.fortier@gmail.com](mailto:jerome.fortier@gmail.com)), LaCIM, Université du Québec à Montréal, CP 8888, Succ. Centre-ville, Montréal, Québec H3C 3P8, Canada. *Higher-order languages are circularly computable.*

We are interested in the problem of expressiveness of the following operations: finite products and coproducts of sets, induction and coinduction. These operations are the building blocks of a logical system that allows circularity in Gentzen-style proofs. Proofs in this system are seen as simple programs, while the cut-elimination process is viewed as a running automaton with a memory device. In this paper, we show that higher-order languages, those accepted by higher-order pushdown automata, are computable in this setting, by providing an explicit simulation of the automata by cut-elimination. (Received August 14, 2014)