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# The state complexity of language operations on XNFA-succinct unary regular languages

Laurette Marais

Meraka Institute and Stellenbosch University, South Africa

LPretorius@csir.co.za

Lynette van Zijl

Stellenbosch University, South Africa, lvzijl@sun.ac.za

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**Abstract**

Given two unary languages accepted by symmetric difference non-deterministic finite automata, we establish bounds on the state complexity of their union, intersection, relative complement and symmetric difference. For languages L1 and L2 accepted by minimal symmetric difference nondeterministic finite automata of size m and n respectively, we show that the state complexity of their union, intersection and relative complement has an upper bound of (2m - 1)(2n - 1).