

## **Relations between consecutive Catalan monoids**

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The goals of this paper are to study the classical Catalan monoids, to characterize their idempotents and nilpotents and to give emphasis to some non-trivial relations between consecutive Catalan monoids. Incidentally, a curious relation involving Catalan numbers is obtained. Finally, a new algorithm for generating tree-like constructs of Catalan monoids that allows the total ordering and description of reduced forms for all their elements, is described in detail.

Keywords: Catalan monoid, idempotent generated monoid, extensive order-preserving function