

ELEMENTS WITH UNIQUE LENGTH FACTORIZATION OF A NUMERICAL SEMIGROUP GENERATED BY THREE CONSECUTIVE NUMBERS

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ABSTRACT. Let \mathcal{S} be the numerical semigroup generated by three consecutive numbers $a, a+1, a+2$, where $a \in \mathbb{N}$, $a \geq 3$. We study the set $\text{ULF}(\mathcal{S})$ of elements r of \mathcal{S} whose factorizations have all the same length, as well as the set of factorizations of these elements. We give natural partitions of $\text{ULF}(\mathcal{S})$ in terms of the length and the denumerant. By using Apéry sets and Betti elements, we are able to extend some results for the set $\text{ULF}(\mathcal{S})$, first obtained by elementary means.

This talk is based on a joint work with **Pedro A. Garca-Snchez** (Universidad de Granada) and **Francesc Planas-Vilanova** (Universitat Politcnica de Catalunya).