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# SEMINARIO

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### ***A Wilf-type inequality for numerical semigroups and local rings***

**Abstract:** Numerical semigroups are additive submonoids of  $(\mathbb{N}, +)$ , with finite complement in  $\mathbb{N}$ . Despite their simple structure, there are many interesting problems regarding numerical semigroups, often arising from their connection with other research subjects in mathematics.

In this talk I will present a longstanding conjecture known as Wilf's conjecture, that is an inequality involving embedding dimension and multiplicity of a numerical semigroup. This conjecture has been proved for some classes of numerical semigroups, but no general strategy has been found to solve it. Successively, I will show a similar, but weaker, inequality, recently proved by A. Moscariello and myself.

This inequality, like also Wilf's conjecture, can be re-interpreted for one-dimensional local rings and also in higher dimension, provided that the conductor of the ring in its integral closure in the total ring of fractions is  $m$ -primary.

The new results presented in this talk are contained in two joint works with A. Moscariello.

**Seminario IMUVA, Edificio LUCIA**  
**Jueves 10 de Octubre de 2024 (12:00)**  
**Organiza: GIR SINGACOM**

