

Seminario de Grafos

Speaker: Ana Laura Trujillo (CMM)

Title: Separating the edges of a graph by a linear number of paths.

Abstract: A collection \mathcal{P} of paths in a graph G is called a *strongly-separating path system* if, for any two edges e and f in G , there exist paths $P_e, P_f \in \mathcal{P}$ such that e belongs to P_e but not to P_f , and f belongs to P_f but not to P_e . If \mathcal{P} contains a path that includes one edge but not the other, it is called a *weakly-separating path system*. In 2014, Falgas-Ravry, Kittipassorn, Korándi, Letzter, and Narayanan conjectured that every graph on n vertices admits a weakly-separating path system of size $O(n)$. Independently, in 2016, Balogh, Csaba, Martin, and Pluhár posed a similar conjecture for strongly-separating path systems. In 2022, Letzter made significant progress by proving the existence of a strongly-separating path system of size $n \log^* n$. More recently, in 2023, Bonamy, Botler, Dross, Naia, and Skokan confirmed the conjecture of Balogh et al., showing that every graph on n vertices admits a strongly-separating path system of size $19n$. In this talk, we will present the construction and key ideas behind the proof by Bonamy et al., which establishes this improved bound.

Viernes 27 de Septiembre , 2024 / 10.00-11.00, Sala John Von Neumann (7° Piso)

