

## Seminario de Grafos

**Speaker:** Simón Piga (University of Hamburg, Alemania)

**Title:** Powers of Hamilton cycles in directed and oriented graphs.

**Abstract:** The Pósa–Seymour conjecture determines the minimum degree threshold for forcing the  $k$ th power of a Hamilton cycle in a graph. After numerous partial results, Komlós, Sárközy and Szemerédi proved the conjecture for sufficiently large graphs. We focus on the analogous problem for digraphs and for oriented graphs. For digraphs, we asymptotically determine the minimum total degree threshold for forcing the square of a Hamilton cycle. We also give a conjecture on the corresponding threshold for  $k$ th powers of a Hamilton cycle more generally. For oriented graphs, we provide a minimum semi-degree condition that forces the  $k$ th power of a Hamilton cycle, matching the correct order of magnitude of the threshold.

**Friday 25th, 10:00 at room John von Neumann.**

