

## Combinatorics Seminar

### *On the Ramsey-Turan number with small independence number*

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**Abstract:** In this talk we consider the following question motivated by the classical Turan and Ramsey theorems. What is the maximum number of edges in a  $K_t$ -free graph  $G$  of order  $n$  with the  $s$ -independence number smaller than  $f(n)$  (where the  $s$ -independence number is the maximum number of vertices in a  $K_s$ -free induced subgraph of  $G$ )? This problem attracted a considerable amount of attention and has been mainly studied for  $f$  not too much smaller than  $n$ . In this talk we consider  $f(n) = n^d$  for  $d < 1$ . In particular, we show that the maximum number of edges in a  $K_{s+1}$ -free graph of order  $n$  with the  $s$ -independence number at most  $n^d$  (for any  $1/2 < d < 1$ ) is roughly speaking  $n^{1+d}$ .

Monday, February 13 at 2:00 PM in SEO 612