

EXPONENTIAL IMPROVEMENT ON DIAGONAL RAMSEY NUMBERS

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The Ramsey Number $R(k)$ is the minimum n such that every red/blue coloring of the edges of K_n contains a monochromatic K_k . In this talk I will discuss a recent work where we show that

$$R(k) \leq (4 - c)^k,$$

for some $c > 0$. This is the first exponential improvement on the Erdős and Szekeres upper bound proved in 1935.

Joint work with Simon Griffiths (PUC - Rio, Brazil), Robert Morris (IMPA, Brazil) and Julian Sahasrabudhe (University of Cambridge, England).