

# 学术报告

Rainbow triangles in three-colored graphs

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**Time:** 16:00-17:00, Sep 15 (Saturday) 2018

**Venue:** Room 111, Center for Applied Mathematics

**Abstract:** Erdős and Sós proposed the problem of determining the maximum number  $F(n)$  of rainbow triangles in 3-edge-colored complete graphs on  $n$  vertices. They conjectured that  $F(n) = F(a) + F(b) + F(c) + F(d) + abc + abd + acd + bcd$ , where  $a + b + c + d = n$  and  $a, b, c, d$  are as equal as possible. We prove that the conjectured recurrence holds for sufficiently large  $n$ . We also prove the conjecture for  $n = 4^k$  for all  $k \geq 0$ . These results imply that

$\lim_{n \rightarrow \infty} \frac{F(n)}{\binom{n}{3}} = 0.4$ , and determine the unique limit object.

In the proof we use flag algebras combined with stability arguments. (Joint work with József Balogh, Bernard Lidický, Florian Pfender, Jan Volec and Michael Young.)

欢迎大家参加！