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Jozsef Balogh, Ping Hu, Bernard Lidicky* (lidicky@iastate.edu), **Florian Pfender, Jan Volec** and **Michael Young**. *Maximizing the number of rainbow triangles.*

Erdős and Sós proposed a problem of maximizing the 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 and $F(0) = 0$. We prove that the conjectured recurrence holds for sufficiently large n . We also prove the conjecture if $n = 4^k$ 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. (Received July 28, 2014)