

Recall that the Ramsey number $R(n, m)$ is the least k such that, whenever the edges of the complete graph on k vertices are coloured red and blue, then there is either a complete red subgraph on n vertices or a complete blue subgraph on m vertices – for example, $R(4, 3) = 9$. This generalises to ordinals: given ordinals α and β , let $R(\alpha, \beta)$ be the least ordinal γ such that, whenever the edges of the complete graph with vertex set γ are coloured red and blue, then there is either a complete red subgraph with vertex set of order type α or a complete blue subgraph with vertex set of order type β – for example, $R(\omega + 1, 3) = \omega \cdot 2 + 1$. We will prove the result of Erdős and Milner that $R(\alpha, k)$ is countable whenever α is countable and k is finite, and look at a topological version of this result. This is joint work with Andrés Caicedo.