Recent advances in Ramsey theory

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For many decades, randomness has been the central idea to address the question of determining growth rates of graph Ramsey numbers. Recently, we proved a theorem which suggests that "pseudo-randomness" and not complete randomness may in fact be a more important concept for this area. Consequently, we reduce one of the main open problems in graph Ramsey theory to the possibly simpler question of constructing certain pseudorandom graphs. This new connection widens the possibility to use tools from algebra, geometry, and number theory to address the fundamental questions in Ramsey theory. This is joint work with Jacques Verstraete.