Induced and noninduced Ramsey numbers of k-partite, k-uniform hypergraphs

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Abstract: Given two (hyper)graphs S and T, the Ramsey number $r(S,T)$ is the smallest integer n such that, for any two-coloring of the edges of K_n with red and blue, we can find a red copy of S or a blue copy of T. Similarly, the induced Ramsey number, $r_{\text{ind}}(S,T)$, is defined to be the smallest integer N such that there exists a (hyper)graph R with the following property: In any two-coloring of the edges of R with red and blue, we can always find a red *induced* copy of S or a blue *induced* copy of T. In this talk we will discuss bounds for $r(K_{t,\ldots,t}^{(k)}, K_s^{(k)})$ where $K_{t,\ldots,t}^{(k)}$ is the complete k-partite k-graph with partition classes of size t. We also present new upper bounds for $r_{\text{ind}}(S,T)$, where $T \subseteq K_{t,\ldots,t}^{(k)}$ and $S \subseteq K_s^{(k)}$.

Friday, November 16, 2012, 4:00 pm
Mathematics and Science Center: W303

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