Domination in 3-edge-colored complete graphs

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Abstract: Erdos, Faudree, Gould, Gyarfas, Rousseau and Schelp proved that for every complete graph of order $n$ with edges colored with three colors, there exist a set $X$ of 22 vertices and a color $c$ such that the number of vertices in $X$ or joined to a vertex of $X$ by an edge of color $c$ is at least $2n/3$. They also conjectured that the bound of 22 can be lowered to 3. We improve the bound to 4.

The talk is based on joint work with Chun-Hung Liu, Jean-Sebastien Sereni, Peter Whalen and Zelealem Yilma.

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