Guangzhou Discrete Mathematics Seminar

Existence of 3-factors in star-free graphs with high connectivity

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A graph is called $K_{1,t}$-*free* (or t-*star-free*) if it contains no $K_{1,t}$ (or t-*star*) as an induced subgraph. We call a spanning r-regular subgraph of a graph an r-*factor*. Ota and Tokuda gave a minimum degree condition for a $K_{1,t}$-free graph to have an r-factor [J. Graph Theory 22 (1996), 59–64]. Though their condition is best-possible, their sharpness examples have connectivity one. After that, some researchers have tried to improve the minimum degree condition by assuming larger connectivity. In this talk, we focus on a sufficient degree condition for the existence of 3-factors in star-free graphs with high connectivity.