**Zbl 857.05077**

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*Covering and independence in triangle structures.* (In English)

**Discrete Math. 150, No.1-3, 89-101 (1996). [0012-365X]**

A graph is triangular if each edge is contained in at least one triangle. In the paper under review, several results concerning the following two invariants are proved. For $i = 1, 2$ we have: (1) $\alpha_i(G)$ is the smallest cardinality of an edge set containing at least $i$ edges of each triangle, and (2) $\tau_i(G)$ is the largest cardinality of an edge set containing at most $i$ edges of each triangle. For example, every triangular graph $G$ with $n$ vertices satisfies $\alpha_i(G) \leq \lfloor (n-1)^2/4 \rfloor$, and every connected graph with $n$ vertices satisfies $\alpha_1(G) \geq (n-1)/2$. There is a positive constant $c$ such that $\alpha_1(G) + \tau_1(G) \geq ce^{2/3}$ holds for every graph $G$ with $e$ edges and $\alpha_1(G) + \tau_1(G) \leq e - ce^{1/3}$ for every triangular graph with $e$ edges.

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Classification:
05C70 Factorization, etc.
05C35 Extremal problems (graph theory)
05C55 Generalized Ramsey theory

Keywords:
covering; independence; triangle; triangular graph