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*Algorithmic solution of extremal digraph problems.* (In English)

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For a given family  $\mathcal{L}$  of digraphs, the maximum number  $\text{ex}(n, \mathcal{L})$  of arcs a digraph on  $n$  vertices containing no member of  $\mathcal{L}$  can possess and the set  $\text{Ex}(n, \mathcal{L})$  of digraphs which attain this maximum are studied. In particular, the asymptotic behaviour of  $\text{ex}(n, \mathcal{L})/n^2$  is discussed in detail.

For a square matrix  $A$ , a sequence  $A(n)$  of digraphs, called matrix digraphs, are defined which are of, in some sense, simple structure. An algorithm is given to determine all matrices  $A$  such that each  $A(n)$  contains no member of  $\mathcal{L}$ , and has  $\text{ex}(n, \mathcal{L}) + o(n^2)$  arcs as  $n \rightarrow \infty$ .

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Classification:

05C35 Extremal problems (graph theory)

05C20 Directed graphs (digraphs)

Keywords:

digraphs