CONTINUOUS COVERING PROBLEMS

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Covering problems are frequently encountered in Operations Research, Location Theory, Telecommunications and Geometry. The most studied are the discrete ones, such as the p-center problem. However, continuous problems are of interest also. They are of two types:

(i) discrete-continuous ones, in which a discrete set of demand points is given, together with a continuous set wherein facilities are to be located, the objective being to minimize the maximum distance from a demand point to its closest facility;

(ii) fully continuous ones which differ from the former only in that the set of demand points is continuous; this last category comprizes well-known geometric problems such as covering disks, squares or tringles by a minimum number of disks of given radius (or with a given number n of disks with minimum radius).

We review work on these problems and provide new heuristic and exact algorithms for both of them.

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