

A genetic algorithm for dispersion on point-feature cartographic label placement problem

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This paper concerns to the Point Feature Cartographic Label Placement Problem (PFCLP), which is a NP-hard combinatorial problem. It is considered that when all points must be labeled and overlaps are inevitable, the map can be more readable if overlapping labels are placed in a dispersive way, i. e., overlapping labels are distant from each other. This work presents a Constructive Genetic Algorithm (CGA) for the Discrete Dispersion PFCLP, which utilizes the notion of masking to preserve optimal subsequences in chromosomes. We also define the Discrete Dispersion PFCLP as a mixed integer linear programming model solved by CPLEX. The computational results validate our CGA approach using instances up to 5046 points.