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An Optimal Path Planning Proposal for Motion Robots with Specific Constraints Applicable in Biomedical Engineering

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Optimal path planning for motion robots is an interesting research subject with many applications in various domains including biomedical applications when a mobile robot can distribute medication for patients. A fuzzy environment with object approximated by ellipses is a common situation in terrain applications when a mobile robot must find an optimal route. In some situations, e.g. biomedical applications, some additional constraint related to medical instrumentation impose to find some pathway where a mobile robot must be at an equal distance between the objects in order to have a good balance between possible electrical influences or specific requirements. The results show a feasible solution that can be implemented for predefined routes which must go among a marked set of objects, left and right parts of the mobile robot.