APPLICATION OF MARION'S THEOREM FOR OPTIMIZATION OF RESOURCES IN INTELLIGENT PASTURE CATTLE FARMING

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Abstract. *The present work aims to present a theoretical and applied model for pasture management, based on geometric dependencies in the triangle plane. The model uses a generalization of Marion's theorem and the properties of the central hexagon, and a dynamic zoning algorithm is proposed. The main focus is on a situation where an optimal elliptical fence is allowed to be inserted into the considered hexagon. The model integrates the location through barycentric coordinates and optimizes the balance between pasture area, costs for building an electric shepherd, and the signal quality from LoRa base stations.*

Key words: Marion's Theorem, Intelligent Pasture Livestock Farming

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