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Football: Emergent resource gathering in collective robotic environments

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ABSTRACT

Robotic collectives have been a very popular research topic in the last years. Also, applying emergent behavior patterns to such collectives has been similarly popular. This article introduces a mathematical model for resource gathering applications which is based on the study of ant colonies and validates it by simulating it inside Microsoft Robotics Studio simulator. The model is based on the implementation of a new emergent pattern, called "patrol". During the course of the simulations, another emergent behavior pattern, called "Football", is studied.

INDEX TERMS

- **IEEE Terms**

Mathematical model , Mobile robots , Robot kinematics , Robot sensing systems , Wheels