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Nota di contenuto	A Navigation Algorithm for Swarm Robotics Inspired by Slime Mold Aggregation -- Strategies for Energy Optimisation in a Swarm of Foraging Robots -- A Macroscopic Model for Self-organized Aggregation in Swarm Robotic Systems -- An Analytical and Spatial Model of Foraging in a Swarm of Robots -- Algorithms for the Analysis and Synthesis of a Bio-inspired Swarm Robotic System -- Coordination and Control of Multi-agent Dynamic Systems: Models and Approaches -- Communication in a Swarm of Miniature Robots: The e-Puck as an Educational Tool for Swarm Robotics -- UltraSwarm: A Further Step Towards a Flock of Miniature Helicopters -- Where Are You? -- Collective Perception in a Robot Swarm -- Distributed Task Selection in Multi-agent Based Swarms Using Heuristic Strategies -- Evolution of Signalling in a Group of Robots Controlled by Dynamic Neural Networks

-- Collective Specialization for Evolutionary Design of a Multi-robot System -- Scalability in Evolved Neurocontrollers That Guide a Swarm of Robots in a Navigation Task.

Sommario/riassunto

Swarm robotics is the study of how large numbers of relatively simple physically embodied agentscanbe designedsuchthat a desiredcollectivebehavioremerges from the local interactions among agents and between the agents and the en- ronment. Swarm robotics has emerged as a novel approach to the coordination of large numbers of robots and is inspired from observation of social insects – ants, termites, wasps and bees – which stand as fascinating examples of how a large number of simple individuals can interact to create collectively intelligent systems. Socialinsects areknownto coordinatetheir actionsto accomplishtasks that are far beyond the capabilities of a single individual: termites build large and complex mounds, army ants organize impressive foraging raids, ants can collectively carry large prey. Such coordination capabilities are still well beyond the reach of current multi-robot systems. Researchon swarmroboticshasseen a signi?cantincreasein the last 5 years. A number of successful swarm robotic systems have now been demonstrated in the laboratory and the study of the design, modelling, implementation and analysis of swarm robotic systems has become a hot topic of research. This workshop was organized within SAB 2006, as a sequel to the successful ?rst swarmroboticsworkshopin2004, withtheaimofreviewingandupdatingrecent advances on the topic. We received 21 full papers (20 research + 1 review) and accepted 14 (13 research + 1 review). Overall, we, as organizers, were pleased with the number of submissions, and a number of our reviewers explicitly commented on the generally high quality of the papers.