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Nota di contenuto	A Comparison of Particle Swarm Optimization Algorithms Based on Run-Length Distributions -- A Comparison of Particle Swarm Optimization Algorithms Based on Run-Length Distributions -- A Framework and Model for Soft Routing: The Markovian Termite and Other Curious Creatures -- A Stochastic Traffic Assignment Algorithm Based on Ant Colony Optimisation -- An Analysis of the Different Components of the AntHocNet Routing Algorithm -- An Energy-

Efficient Ant-Based Routing Algorithm for Wireless Sensor Networks -- An Enhanced Aggregation Pheromone System for Real-Parameter Optimization in the ACO Metaphor -- An Estimation of Distribution Particle Swarm Optimization Algorithm -- Ant-Based Approach to the Knowledge Fusion Problem -- Beam-ACO Applied to Assembly Line Balancing -- Boundary Search for Constrained Numerical Optimization Problems in ACO Algorithms -- Chain Based Path Formation in Swarms of Robots -- Communication, Leadership, Publicity and Group Formation in Particle Swarms -- Covering a Continuous Domain by Distributed, Limited Robots -- Incremental Local Search in Ant Colony Optimization: Why It Fails for the Quadratic Assignment Problem -- Individual Discrimination Capability and Collective Choice in Social Insects -- Iterated Ants: An Experimental Study for the Quadratic Assignment Problem -- Negotiation of Goal Direction for Cooperative Transport -- On – Ant System's Parameters -- On the Invariance of Ant System -- Parallel Ant Colony Optimization for the Traveling Salesman Problem -- Placement Constraints and Macrocell Overlap Removal Using Particle Swarm Optimization -- PLANTS: Application of Ant Colony Optimization to Structure-Based Drug Design -- Rendezvous of Glowworm-Inspired Robot Swarms at Multiple Source Locations: A Sound Source Based Real-Robot Implementation -- Replicating Multi-quality Web Applications Using ACO and Bipartite Graphs -- Restoration Performance vs. Overhead in a Swarm Intelligence Path Management System -- Solving a Bi-objective Flowshop Scheduling Problem by Pareto-Ant Colony Optimization -- Traffic Patterns and Flow Characteristics in an Ant Trail Model -- Short Papers -- A Continuous Particle Swarm Optimization Algorithm for Uncapacitated Facility Location Problem -- A Direct Application of Ant Colony Optimization to Function Optimization Problem in Continuous Domain -- A Parallel ACO Approach Based on One Pheromone Matrix -- An ACO-Based Clustering Algorithm -- An Adaptive Search Heuristic for the Capacitated Fixed Charge Location Problem -- An Ant Colony System for the Open Vehicle Routing Problem -- An Ant-Based Approach to Color Reduction -- An Orthogonal Search Embedded Ant Colony Optimization Approach to Continuous Function Optimization -- Ant Based Mechanism for Crisis Response Coordination -- Autonomous Gossiping of Information in a P2P Network with Artificial Ants -- Cooperative VLSI Tiled Architectures: Stigmergy in a Swarm Coprocessor -- Distributed Shortest-Path Finding by a Micro-robot Swarm -- Fleet Maintenance Scheduling with an Ant Colony System Approach -- Geoacoustic Inversion and Uncertainty Analysis with Ant System -- Higher Order Pheromone Models in Ant Colony Optimisation -- Hybrid Particle Swarm Optimization: An Examination of the Influence of Iterative Improvement Algorithms on Performance -- Introducing a Binary Ant Colony Optimization -- Kernelization as Heuristic Structure for the Vertex Cover Problem -- Minimizing Total Earliness and Tardiness Penalties with a Common Due Date on a Single-Machine Using a Discrete Particle Swarm Optimization Algorithm -- Model Selection for Support Vector Machines Using Ant Colony Optimization in an Electronic Nose Application -- On the Popularization of Artificial Insects: An Interactive Exhibition for a Wide Audience to Explain and Demonstrate Computer Science and Robotic Problem Solving Taking Inspiration of Insects -- Solution Representation for Job Shop Scheduling Problems in Ant Colony Optimisation -- Some Experiments with Ant Colony Algorithms for the Exam Timetabling Problem -- Extended Abstracts -- A Search Ant and Labor Ant Algorithm for Clustering Data -- ACO Applied to Switch Engine Scheduling in a Railroad Yard -- ACO for Continuous Optimization Based on Discrete

Encoding -- Applying Aspects of Multi-robot Search to Particle Swarm Optimization -- Applying Multiple Ant Colony System to Solve Single Source Capacitated Facility Location Problem -- Energy Efficient Sink Node Placement in Sensor Networks Using Particle Swarm Optimization -- Evolution in Swarm Intelligence: An Evolutionary Ant-Based Optimization Algorithm -- Extending the Particle Swarm Algorithm to Model Animal Foraging Behaviour -- Particle Swarm Optimization for Facility Layout Problems With/Out Department-Specific Restrictions -- Self-organized and Social Models of Criminal Activity in Urban Environments -- Traffic Lights Control with Adaptive Group Formation Based on Swarm Intelligence -- Using Pheromone Repulsion to Find Disjoint Paths.

Sommario/riassunto

ANTS – The International Workshop on Ant Colony Optimization and Swarm Intelligence is now at its ?fth edition. The series started in 1998 with the - ganization of ANTS 1998. At that time the goal was to gather in a common meeting those researchers interested in ant colony optimization: more than 50 researchers from around the world joined for the ?rst time in Brussels, Belgium, to discuss ant colony optimization and swarm intelligence related research. A selectionofthebest paperspresentedatthe workshopwaspublished asa special issue of the Future Generation Computer Systems journal (Vol. 16, No. 8, 2000). Two years later, ANTS 2000, organized again in Brussels, attracted more than 70 participants. The 41 extended abstracts presented as talks or posters at the workshopwere collected in a booklet distributed to participants, and a selection of the best papers was published as a special section of the IEEE Transactions on Evolutionary Computation (Vol. 6, No. 4, 2002). After these ?rst two successful editions, it was decided to make of ANTS a seriesofbiannualeventswitho?cialworkshopproceedings. Thethirdandfourth editions were organized in September 2002 and September 2004, respectively. Proceedings were published by Springer within the Lecture Notes in Computer Science (LNCS) series. The proceedings of ANTS 2002, LNCS Volume 2463, contained 36 contri- tions: 17 full papers, 11 short papers, and 8 extended abstracts, selected out of a total of 52 submissions. Those of ANTS 2004, LNCS Volume 3172, contained 50 contributions:22 full papers, 19 shortpapers, and 9 extended abstracts,selected out of a total of 79 submissions.