

## Ant System with Acoustic Communication

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**Abstract :** Ant colony optimization is an ant algorithm framework that took inspiration from foraging behaviour of ant colonies. Indeed, ACO algorithms use a chemical communication, represented by pheromone trails, to build good solutions. However, ants involve different communication channels to interact. Thus, this paper introduces the acoustic communication between ants while they are foraging. This process allows fine and local exploration of search space and permits optimal solution to be improved.

**Keywords :** acoustic communication, ant colony optimization, local search, traveling salesman problem

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