Multiobjective Vehicle Routing Problem with Time Windows (VRPTW)

Multiobjective Evolutionary Algorithm (MOEA)

Constraint handling mechanism
- (a) filtering
- (b) penalty
- (c) multi-objective

Generation of infeasible solutions
- Find the worst route
- Allow infeasibility probabilistically
- Reorder customers
- Move customers to other routes

Experiments & Results

Benchmarks
- Nine state-of-the-art benchmark algorithms (2006~2012)
- Four categories, 39 problem instances, 100 customers

Observations & Results
- Infeasible solutions are useful, but the ratio should be small.
- On average, filtering mechanism is better than the other two.
- Our algorithm finds 50% of non-dominated solutions and updates 30% of them.