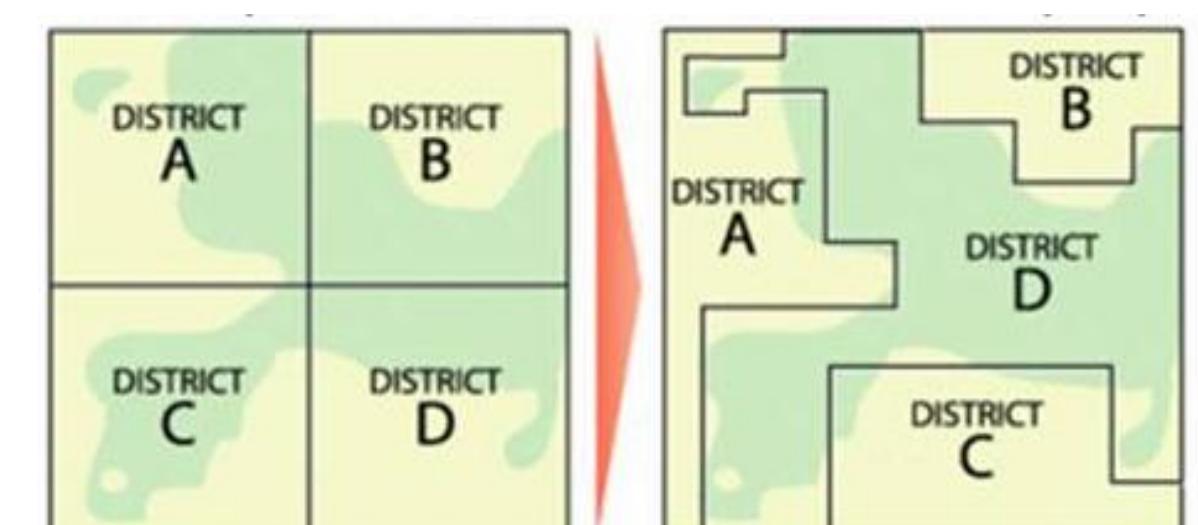
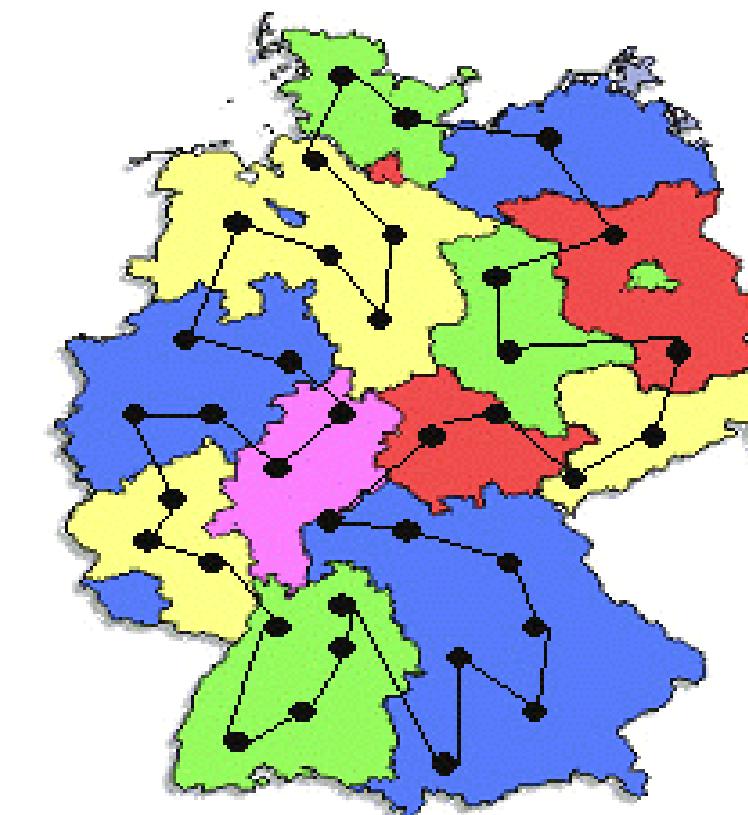
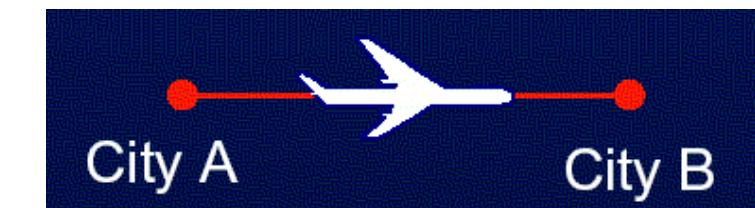




## Mixed Integer Programming (MIP)

### Project main interests:

- Couple Lagrangian relaxation with heuristics
- Solve Lagrangian relaxation/penalty function by stochastic global optimization methods
- Implement interior point techniques coupled with heuristics
- Extend algorithms for mixed nonlinear optimization
- Address traveling salesman, repairman, airline scheduling problems ...
- Produce software for research purposes



### Research Team

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### Publications

Rocha, A.M.A.C.; Fernandes, E.M.G.P.; Soares, J.L.C., An  $\varepsilon$ -approximation algorithm for linear programs, **XXVIII Congreso de Estadística e Investigación Operativa**, ISBN: 84-689-0438-4 CD-ROM (11 pp), Cádiz, 2004.

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Rocha, A.M.A.C.; Fernandes, E.M.G.P.; Soares, J.L.C., Aplicação do algoritmo volumétrico à resolução aproximada e exacta do problema do caixeiro viajante assimétrico, **Investigação Operacional**, V. 25 (2) 277-294 , 2005.

Rocha, A.M.A.C.; Fernandes, E.M.G.P.; Soares, J.L.C., Solving the traveling repairman problem with differentiated waiting times through Lagrangian relaxation, **I Congresso de Estatística e Investigação Operacional da Galiza e Norte de Portugal/VII Congreso Galego de Estatística e Investigación de Operacións**, ISBN 972-99841-0-7, 6 pp, Guimarães, 2005.

### PhD and MSc Theses

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Domingues, F., Método da Lagrangeana aumentada com base no algoritmo electromagnético para optimização global, MSc thesis, supervisor: Rocha, A.M.A.C. (ongoing).