

STIC-AMSUD/CONICYT

Chile

The Chilean team has interest and competencies in:

- **Optimization:** Linear Programming, Network flow and Integer Programming: Lorena Pradenas, Víctor Parada, Rosa Medina and Rodrigo Linfati;
- **Constraint Programming :** Lorena Pradenas, Víctor Parada, Rosa Medina and Rodrigo Linfati;
- **Heuristic and metaheuristic:** with an emphasis on evolutionary algorithms: Lorena Pradenas, Víctor Parada, Rosa Medina and Rodrigo Linfati;
- **Coding and Algorithmic:** Rosa Medina, Rodrigo Linfati and Víctor Parada.

STIC-AMSUD/CONICYT

Chile

Investigadora: Lorena Pradenas (Dra.), UDEC-Chile.

- o Lorena Pradenas, Boris Oportus and Víctor Parada (2013) .Mitigation of greenhouse gas emissions in vehicle routing problems with backhauling. *Expert Systems with Applications*, 40 (8), pp. 2985–2991.
- o <http://www.sciencedirect.com/science/article/pii/S0957417412012559>.
- o Pradenas, L., Alexander, J., Parada, V., Scherer, R (2012).. Ranking Business and Economics Journals in South America using the Scientific Electronic Library Online. *Journal of Education for Business* 87(3), 152-158,
- o Lorena Pradenas R.y Exequiel Matamala.R. (2012). Una formulación matemática y de solución para programar cirugías con restricciones de recursos humanos en el hospital público. *Revista Chilena de Ingeniería*, 20 (2), 230-241. (SCIELO-Chile).
- o Lorena Pradenas R., Carlos Parra G. (2012). Uso de minería de datos para determinar la disponibilidad de una red IP V.4 en una cadena de terminales distribuidos. Estudio de caso en una empresa de juegos de azar. *Pesquisa Operacional para o Desenvolvimento*, 4(3), 257-270 (SCIELO-Brasil).
- o Pradenas, L., Campos, A., Saldaña, J., Parada, V. (2011). Scheduling copper refining and casting operations by means of heuristics for the flexible flow shop problem. *Pesquisa Operacional*. 31(3):1-15,
- o Medina, R., Pradenas, L. Parada, V (2011). Un algoritmo genético para el problema de job shop flexible. *Ingeniare*. 19(1): 53-61.,
- o Lorena Pradenas, Abel Campos, Jesús Saldaña y Víctor Parada (2011). Scheduling copper refining and casting operations by means of heuristics for the flexible flow problem, *Pesquisa Operacional*, 31(3), 443-457 (SCIELO-Brasil), ISSN 0101-7438.
- o R. Elizondo, V. Parada, L. Pradenas and C. Artigues (2010). An evolutionary and constructive approach to a crew scheduling problem in underground passenger transport, *Journal of Heuristics*, 16,(4), pp 575-591,
<http://www.springerlink.com/content/1381-1231>.<http://www.springerlink.com/content/1381-1231/16/4/>

STIC-AMSUD/CONICYT Chile

Investigadora: Lorena Pradenas (Dra.), UDEC-Chile.

- o Pradenas L. Alvarez C. and Ferland J. (2009). "A solution for the aggregate production planning problem in a multi-plant, multi-period and multi-product environment", *Acta Mathematica Vietnamica*, Vol 34 (N° 1), pp 11-17.
- o PRADENAS L., PARADA V., And ZUÑIGA J. "Copper Smelting Operations Programming", *INTERFACES*, julio-agosto 2006, 296-301.
- o L. Pradenas, F. Peñailillo and J. Ferland (2004) Aggregate production planning problem. A new Algorithm, *Electronic Notes in Discrete Mathematics*, Volume 18), 193-199.

STIC-AMSUD/CONICYT

Chile

Investigador: Víctor Parada (Dr.), USACH-Chile.

- o Contreras, C., Gatica, G., Parada, V. Automatically generated algorithms for the Vertex Coloring Problem. [PLoS ONE 8\(3\): e58551. doi:10.1371/journal.pone.0058551](https://doi.org/10.1371/journal.pone.0058551), 2013.
- o Lorena Pradenas, Boris Oportus and Víctor Parada (2013) .Mitigation of greenhouse gas emissions in vehicle routing problems with backhauling. *Expert Systems with Applications*, 40 (8), pp. 2985–2991. <http://www.sciencedirect.com/science/article/pii/S0957417412012559>.
- o Ferreira C.S., Ochi, L. S., Parada, V., Uchoa, E. A GRASP-based approach to the generalized minimum spanning tree problem. [*Expert Systems with Applications*](#). 39(3), 3526-3536, 2012.
- o Sabattin, J., Parada, V., Arias, M., Contreras, C. Evolutionary optimization of electric power distribution by means of the Dandelion code. [*Journal of Electrical and Computer Engineering*](#). Volume 2012, Article ID 738409, 2012.
- o Rojas, J., Solar, M., Mendoza, M., Monge, R., Parada, V. A Multiagent-based approach to the grid-scheduling problem. [*CLEI Electronic Journal*](#). 15(2), 2012.
- o Pradenas, L., Alexander, J., Parada, V., Scherer, R. Ranking Business and Economics Journals in South America using the Scientific Electronic Library Online. [*Journal of Education for Business*](#) 87(3), 152-158, 2012.
- o Pradenas, L., Campos, A., Saldaña, J., Parada, V. Scheduling copper refining and casting operations by means of heuristics for the flexible flow shop problem. [*Pesquisa Operacional*](#). 31(3):1-15, 2011.
- o Medina, R., Pradenas, L. Parada, V. Un algoritmo genético para el problema de job shop flexible. [*Ingeniare*](#). 19(1): 53-61, 2011.

FORTALEZA-BRAZIL, APRIL 2013

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Chile

Investigador: Víctor Parada (Dr), USACH-Chile.

- o Palominos, P., Parada, V., Gatica, G., Vejar, A. Solving single machine and permutation scheduling problems with marriage in honeybee optimization. [Hybrid Algorithms for Service, Computing and Manufacturing Systems: Routing and Scheduling Solutions](#). J. Montoya-Torres et al (Eds.). ISBN13: 9781613500866, 158-177, 2011.
- o Acuña D, Parada V. [People Efficiently Explore the Solution Space of the Computationally Intractable Traveling Salesman Problem to Find Near-Optimal Tours](#). PLoS ONE 5(7), 2010.
- o Pailla, A., Trindade, A., Parada, V. Ochi, L. [A numerical comparison between simulated annealing and evolutionary approaches to the cell formation problem](#). Expert Systems with Applications, 37(7), 5476-5483, 2010.
- o Elizondo, R., Parada, V., Pradenas, L., Artigues, C. [An evolutionary and constructive approach to a crew scheduling problem in underground passenger transport](#). Journal of Heuristics, 16(4), 575-591, 2010.
- o Parada, V. Ferland, J., Arias, M., Schwarzenberg, P., Vargas, L. [Heuristic Determination of Distribution Trees](#). IEEE Transactions on Power Delivery, 25(2), 861-869, 2010.
- o Pradenas, L., Zúñiga, J. and Parada, V. CODELCO, Chile programas its copper smelting operations. [Interfaces](#), 36(4), 296-301, 2006.
- o Pradenas, L., Nuñez, G. y Parada, V., Ferlandd, J. Gestión de Operaciones de refinó y Moldeo en la Producción de Cobre. [Revista de Ingeniería de Sistemas](#), 19(1), 19-28, 2005.

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Investigadora: Rosa Medina (Dra.), UDEC-Chile.

- o F. Furini, E. Malaguti, R. Medina Durán, A. Persiani, P. Toth. "A Column Generation Heuristic for the Two-Dimensional Two-Staged Guillotine Cutting Stock Problem with Multiple Stock Size" European Journal of Operational Research, DOI 10.1016/j.ejor.2011.10.018.
- o R. Medina Durán, L. Pradenas Rojas, V. Parada Daza. "A Genetic Algorithm for the Flexible Job Shop Problem". *Ingeniare. Rev. chil. ing.* 19, January – April 2011.
- o E. Malaguti, R. Medina Durán, P. Toth. "Fast Heuristic Algorithms for Real World Two-Dimensional Cutting Problems". Technical Report OR/10/17, DEIS – University of Bologna, Italy, 2010.
- o E. Malaguti, R. Medina Durán, P. Toth "Heuristic Algorithms for Real World Two Dimensional Cutting Problems" Working paper.
- o E. Malaguti, R. Medina Durán, P. Toth. "Heuristic Algorithms for Real World Two-Dimensional Cutting Problems, Part II" Working paper

STIC-AMSUD/CONICYT

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Investigador: Rodrigo Linfati (Dr.), UBB-Chile

- o Linfati R., Pradena L., **Modelamiento Matemático para la Cosecha Forestal y Plantas Aserraderas**, Tesis de Magister, UdeC
- o Linfati R., Tramontani A., Toth P., **An Integer Linear Programming Model for the Optimal Assignment of Referees: the Italian Volleyball Championships Case**, 25th Conference of European Chapter on Combinatorial Optimization, Antalya, Turkey, 2012.
- o Escobar J.W., Linfati R., Toth P., **A two-phase hybrid heuristic algorithm for the capacitated location-routing problem**, Computers & Operations Research, Volume 40, Issue 1, January 2013, Pages 70–79, <http://dx.doi.org/10.1016/j.cor.2012.05.008>
- o Escobar J.W., Linfati R., Baldoquin M.G., Toth P., **A comparison of three metaheuristic algorithms for the capacitated location-routing problema**, 5th International Workshop on Freight Transportation and Logistics, Mykonos, Greece, 2012.
- o Escobar J.W., Linfati R., Baldoquin M.G., Toth P., **A metaheuristic algorithm for the Multi-Depot Vehicle Routing Problem**, 8th Triennial Symposium on Transportation Analysis, San Pedro de Atacama, Chile, 2013

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Investigador: Rodrigo Linfati (Dr.), UBB-Chile

- o Baldoquin M.G., Linfati R., Escalera A., **Modelos y algoritmos en la solución de un problema real de agrupamiento y planificación de visitas a clientes**, XVI Congreso Latino-Iberoamericano de Investigación de Operativa, Rio de Janeiro, Brasil, 2012.
- o Espinoza, N. Linfati R., **Un modelo matemática para la programación de la producción aplicado a una empresa conservera**, Tesis de grado, Universidad del Bio-Bio. 2012

STIC-AMSUD/CONICYT
Chile



FORTALEZA-BRAZIL, APRIL 2013

STIC-AMSUD/CONICYT Chile



FORTALEZA-BRAZIL, APRIL 2013