

CURRICULUM VITÆ

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GUY DESAULNIERS

Personal information

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Education

Doctorate	Mathematics, École Polytechnique de Montréal, 11/1993 Optimisation du chemin d'un véhicule autonome Supervisors: F. Soumis, S. Dubuc
Master	Mathematics, Université de Montréal, 01/1990 Représentation graphique par ordinateur de surfaces mathématiques Supervisor: S. Dubuc
Bachelor	Mathematics, Université de Montréal, 05/1987

Work experience

Full Professor	Math. & Indus. Eng., École Polytechnique de Montréal, 06/2007–...
Director	GERAD research center, Montréal, 05/2015–...
Associate Professor	Math. & Indus. Eng., École Polytechnique de Montréal, 06/2001–05/2007
Assistant Professor	Math. & Indus. Eng., École Polytechnique de Montréal, 12/2000–06/2001
Researcher	Math. & Indus. Eng., École Polytechnique de Montréal, 08/1999–11/2000
Assistant Professor	Operations and Decision Systems, Université Laval, 09/1998–07/1999
Researcher	Math. & Indus. Eng., École Polytechnique de Montréal, 09/1996–08/1998
Part-time lecturer	Management Quant. Methods, HEC Montréal, 09/1995–05/1999
Associate Researcher	Math. & Indus. Eng., École Polytechnique de Montréal, 10/1993–08/1996
Assistant Professor	Mathematics, Collège Militaire Royal de St-Jean, 08/1993–05/1995
Part-time lecturer	Mathematics, École Polytechnique de Montréal, 01/1991–05/1993
Part-time lecturer	Mathematics, CEGEP Édouard-Montpetit, 08/1990–12/1990

Editorial duties

Associate editor	Transportation Science, 10/2016–...
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Articles published in refereed publications

- [1] KOZA, D.F., DESAULNIERS, G., ROPKE, S., “Integrated liner shipping network design and scheduling”, forthcoming in *Transportation Science*.
- [2] BÜRGY, R., MICHON-LACAZE, H., DESAULNIERS, G., “Employee scheduling with short demand perturbations and extensible shifts”, forthcoming in *Omega*.
- [3] COSTA, L., CONTARDO, C., DESAULNIERS, G., “Exact branch-price-and-cut algorithms for vehicle routing”, forthcoming in *Transportation Science*.
- [4] BAGGER, N.C.F., DESAULNIERS, G., DESROSIERS, J., “Daily course pattern formulation and valid inequalities for the curriculum-based course timetabling problem”, forthcoming in *Journal of Scheduling*.
- [5] DAYARIAN, I., DESAULNIERS, G., “A branch-price-and-cut algorithm for a production-routing problem with short-lifespan products”, forthcoming in *Transportation Science*.
- [6] PECIN, D., CONTARDO, C., DESAULNIERS, G., “Selective pricing in branch-price-and-cut algorithms for vehicle routing”, forthcoming in *EURO Journal on Transportation and Logistics*.
- [7] FINK, M., DESAULNIERS, G., FREY, M., KIERMAIER, F., KOLISCH, R., SOUMIS, F., “Column generation for vehicle routing problems with multiple synchronization constraints”, *European Journal of Operational Research* 272(2), 699–711, 2019.
- [8] RODRÍGUEZ, J., ANJOS, M., CÔTÉ, P., DESAULNIERS, G., “MILP formulations for generator maintenance scheduling in hydro power systems”, *IEEE Transactions on Power Systems* 33(6), 6171–6180, 2018.
- [9] ERRICO, F., DESAULNIERS, G., GENDREAU, M., REI, W., ROUSSEAU, L.-M., “The vehicle routing problem with hard time windows and stochastic service times”, *EURO Journal on Transportation and Logistics* 7(3), 223–251, 2018.
- [10] DESFONTAINES, L., DESAULNIERS, G., “Multiple depot vehicle scheduling problem with controlled trip shifting”, *Transportation Research Part B* 113(1), 34–53, 2018.
- [11] MAHER, S., DESAULNIERS, G., SOUMIS, F., “The daily tail assignment problem under operational uncertainty using look-ahead maintenance constraints”, *European Journal of Operational Research* 264(2), 534–547, 2018.
- [12] LEHOULLIER, T., NASRI, M.I., OMER, J., SOUMIS, F., DESAULNIERS, G., “Solving the air conflict resolution problem under uncertainty using an iterative bi-objective mixed integer programming approach”, *Transportation Science* 51(4), 1226–1241, 2017.
- [13] ARCHETTI, C., DESAULNIERS, G., SPERANZA, M.G., “Minimizing the logistic ratio in the inventory routing problem”, *EURO Journal on Transportation and Logistics* 6(4), 289–306, 2017.
- [14] BOUARAB, H., DESAULNIERS, G., DESROSIERS, J., GAUTHIER, J.B., “Linear fractional approximations for master problems in column generation”, *Operations Research Letters* 45(5), 503–507, 2017.
- [15] KARSTEN, C.V., BROUER, B.D., DESAULNIERS, G., PISINGER, D., “Time constrained liner shipping network design”, *Transportation Research Part E* 105(1), 152–162, 2017.
- [16] PECIN, D., CONTARDO, C., DESAULNIERS, G., UCHOA, E., “New enhancements for the exact solution of the vehicle routing problem with time windows”, *INFORMS Journal on Computing* 29(3), 489–502, 2017.
- [17] ANDERSSON, H., CHRISTIANSEN, M., DESAULNIERS, G., RAKKE, J.G., “Creating annual delivery programs of liquefied natural gas”, *Optimization and Engineering* 18(1), 299–316, 2017.

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- [32] GROIEZ, M., DESAULNIERS, G., MARCOTTE, O., “Valid inequalities and separation algorithms for the set partitioning problem”, *INFOR* 52(4), 185–196, 2014.
- [33] BROUER, B.D., DESAULNIERS, G., PISINGER, D., “A matheuristic for a liner shipping network design problem”, *Transportation Research Part E* 72(1), 42–59, 2014.
- [34] RIBEIRO, G.M.R., DESAULNIERS, G., DESROSIERS, J., VIDAL, T., VIEIRA, B.S., “Efficient heuristics for the workover rig routing problem with a heterogeneous fleet and a finite horizon”, *Journal of Heuristics* 20(6), 677–708, 2014.

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- [37] MAHER, S., DESAULNIERS, G., SOUMIS, F., “Recoverable robust single day aircraft maintenance routing problem”, *Computers and Operations Research* 51, 130–145, 2014.
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Book

- [1] DESAULNIERS, G., DESROSIERS, J., and SOLOMON, M.M. (eds), *Column generation*, Springer, New York, NY, 2005.

Book chapters

- [1] DESAULNIERS, G., MADSEN, O.B.G., ROPKE, S., “The vehicle routing problem with time windows”, P. Toth and D. Vigo (eds.) *Vehicle routing: Problems, methods, and applications*, second edition, MOS-SIAM Series on Optimization, SIAM, Philadelphia, 119–159, 2014.
- [2] DESAULNIERS, G., DESROSIERS, J., SPOORENDONK, S., “The vehicle routing problem with time windows: State-of-the-art exact solution methods”, *Wiley Encyclopedia of Operations Research and Management Science, Volume 8*, J.J. Cochran (ed), Wiley, New York, NY, 5742–5749, 2010.
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Papers in refereed conference proceedings

- [1] BROUER, B.D., DESAULNIERS, G., KARSTEN, C.V., PISINGER, D., “A matheuristic for the liner shipping network design problem with transit time restrictions”, *Proceedings of the 6th International Conference on Computational Logistics*, Delft, Netherlands, September 23-25, 2015, pp. 195–208.
- [2] LEHOULLIER, T., OMER, J., SOUMIS, F., DESAULNIERS, G., “A new variant of the minimum-weight maximum-cardinality clique problem to solve conflicts between aircraft”, *Proceedings of the 3rd International Conference on Modelling, Computation and Optimization in Information Systems and Management Sciences, Part I*, Metz, France, May 11-13, 2015, pp. 3–14.
- [3] GAMACHE, M., HÉBERT-DESGROSEILLIERS, L., DESAULNIERS, G., “A generic linear program for an optimal mine production plan”, *Proceedings of Mine Planning and Equipment Select & Environmental Issues and Waste Management in Energy and Mineral Product*, Banff, Canada, November 16-19, 2009, pp. 326–334.
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Invited talks

- [1] DESAULNIERS, G., “Branch-price-and-cut for vehicle routing”, *VeRoLog PhD school*, Cagliari, Italy, June 1-2, 2018.
- [2] DESAULNIERS, G., “Research projects in operations research”, *Symposium on Licensing in intelligence artificial and data sciences*, Montréal, Canada, May 17, 2018.
- [3] DESAULNIERS, G., ROSTAMI, B., ERRICO, F., LODI, A., “The vehicle routing problem with stochastic and correlated travel times”, *Route 2018*, Snekkersten, Denmark, May 27-30, 2018.
- [4] DESAULNIERS, G., “Branch-price-and-cut for vehicle routing: Recent advances”, *VeRoLog 2017*, Amsterdam, Netherlands, July 10-12, 2017.
- [5] DESAULNIERS, G., PECIN, D., CONTARDO, C., UCHOA, E., “The vehicle routing problem with time windows: Solving 200-customer instances exactly”, *NOW 2015*, La Rochelle, France, May 18-20, 2015.
- [6] DESAULNIERS, G., ERRICO, F., IRNICH, S., SCHNEIDER, M., “Branch-price-and-cut algorithms for electric vehicle routing problems with time windows”, *Route 2014*, Snekkersten, Denmark, June 1-4, 2014.
- [7] DESAULNIERS, G., “20 years of column generation for the vehicle routing problem with time windows”, *EURO XXV*, Vilnius, Lithuania, July 8-11, 2012.
- [8] DESAULNIERS, G., BENAVENT, E., CORBERÁN, A., LESSARD, F., PLANA, I., SANCHIS, J.-M., “A branch-price-and-cut algorithm for the min-max k -vehicle windy rural postman problem”, *Route 2011*, Sitges, Spain, May 31-June 3, 2011.

- [9] DESAULNIERS, G., “Tutorial: Column generation in transportation”, *MITACS/CORS Conference*, Edmonton, Canada, May 25-28, 2010.
- [10] DESAULNIERS, G., SOUMIS, F., “Airline crew scheduling by column generation”, *CIRRELT Spring School on Combinatorial Optimization in Logistics*, Université de Montréal, Montréal, Canada, May 17-20, 2010.
- [11] DESAULNIERS, G., PRESCOTT-GAGNON, E., BÉLANGER-ROY, B., ROUSSEAU, L.-M., “Vehicle routing for propane delivery”, *DOMinant workshop*, Molde, Norway, September 20-22, 2009.
- [12] DESAULNIERS, G., ARCHETTI, C., BOUCHARD, M., “Branch-price-and-cut for vehicle routing with split deliveries and time windows: Cuts on the master problem variables”, *Route 2009*, Skodsborg, Denmark, June 21-24, 2009.
- [13] DESAULNIERS, G., “Branch-and-price-and-cut for the split delivery vehicle routing problem with time windows”, *Column Generation 2008*, Aussois, France, June 17-20, 2008.
- [14] DESAULNIERS, G., “Branch-and-price with dynamic constraint aggregation in passenger transportation”, *Operations Research 2007*, Saarbruecken, Germany, September 5-7, 2007.
- [15] DESAULNIERS, G., PRESCOTT-GAGNON, E., ROUSSEAU, L.-M., “A large neighborhood search algorithm for the vehicle routing problem with time windows”, *Route 2007*, Montréal, Canada, June 25-29, 2007.
- [16] DESAULNIERS, G., ELHALLAOUI, I., SOUMIS, F., “Speeding up column generation with dynamic constraint aggregation”, *Route 2005, International Workshop on Vehicle Routing and Intermodal Transportation*, Bertinoro, Italy, June 23-26, 2005.
- [17] DESAULNIERS, G., “Public transit planning”, *Spring School on Transportation*, HEC Montreal, Canada, May 12-14, 2004.
- [18] DESAULNIERS, G., HAMDOUNI, M., SOUMIS, F., MARCOTTE, O., “Bus dispatching in parking depots using block patterns”, *ECOPT Workshop on Optimization in Public Transport*, Rotterdam, Netherlands, February 19, 2004.
- [19] DESAULNIERS, G., “Bus and driver scheduling in urban mass transit systems”, *IMA, Travel and Transportation Workshop*, Minneapolis, USA, November 11-15, 2002.

Refereed conferences

- [1] DESAULNIERS, G., GSCHWIND, T., IRNICH, S., “Arc-pair variable fixing in branch-price-and-cut algorithms for vehicle routing”, *Odyseus 2018*, Cagliari, Italy, June 3-8, 2018.
- [2] DESAULNIERS, G., CONTARDO, C., PECIN, D., “Selective pricing in branch-and-price algorithms for vehicle routing”, *TRISTAN IX*, Oranjestad, Aruba, June 12-17, 2016.
- [3] DESAULNIERS, G., DAYARIAN, I., “A branch-and-price algorithm for a production-routing problem with short-lifespan products”, *ODYSSEUS*, Ajaccio, France, May 31-June 5, 2015.
- [4] DESAULNIERS, G., ERRICO, F., GENDREAU, M., REI, W., ROUSSEAU, L.-M., “A priori optimization with recourse for the vehicle routing problem with hard time windows and stochastic service times”, *TSL workshop*, Chicago, USA, June 29-July 2, 2014.
- [5] DESAULNIERS, G., RAKKE, J.G., COELHO, L.C., “Branch-price-and-cut for inventory routing under a maximum-level replenishment policy”, *TRISTAN VIII*, San Pedro de Atacama, Chile, June 9-14, 2013.
- [6] DESAULNIERS, G., RIBEIRO, G., DESROSIERS, J., “A branch-price-and-cut algorithm for the workover rig routing problem”, *ODYSSEUS*, Mykonos, Greece, May 21-25, 2012.

- [7] DESAULNIERS, G., PRESCOTT-GAGNON, E., ROUSSEAU, L.-M., “Large neighborhood search heuristics for propane delivery”, *TRISTAN VII*, Tromsø, Norway, June 20-25, 2010.
- [8] DESAULNIERS, G., ARCHETTI, C., BOUCHARD, M., “Enhanced branch-price-and-cut for vehicle routing with split deliveries and time windows”, *ODYSSEUS*, Çeşme, Turkey, May 26-29, 2009.
- [9] DESAULNIERS, G., PRESCOTT-GAGNON, E., ROUSSEAU, L.-M., “A large neighborhood search algorithm for the vehicle routing problem with time windows”, *MIC 2007*, Montréal, Canada, June 25-29, 2007.
- [10] DESAULNIERS, G., PEPIN, A.-S., HERTZ, A., DEREU, G., “Comparison of heuristic approaches for the MDVSP”, *ODYSSEUS*, Altea, Spain, May 23-26, 2006.
- [11] DESAULNIERS, G., “Managing fixed costs in vehicle and crew scheduling problems solved by a branch-and-price approach”, *ODYSSEUS*, Palermo, Italy, May 27-30, 2003.
- [12] DESAULNIERS, G., CORDEAU, J.-F., DESROSIERS, J., “Simultaneous multi-depot bus and driver scheduling”, *TRISTAN IV*, São Miguel, Portugal, June 13-19, 2001.
- [13] DESAULNIERS, G., CORDEAU, J.-F., DESROSIERS, J., LINGAYA, N., SOUMIS, F., “RAIL-WAYS: A fleet assignment system for passenger railway companies”, *TRISTAN III*, San Juan, Porto Rico, June 17-23, 1998.

Supervision or cosupervision of students

M.Sc. students

- [1] MHAMED, TAYEB, “Problèmes de tournées de véhicules avec dépôt mobile”, 08/2018-..., École Polytechnique. G. Desaulniers and M. Cherkesly.
- [2] WU, ALICE, “Apprentissage machine pour le problème d’horaires mensuels des membres d’équipage aériens”, 08/2017-..., École Polytechnique. F. Soumis and G. Desaulniers.
- [3] SÂADI, CHÉRIFA, “Ré-optimisation de l’horaire de travail d’employés en surtemps”, 01/2016-04/2018, École Polytechnique. G. Desaulniers.
- [4] MHAMDI, WADDHAH, “Génération de mises combinatoires dans les enchères de transport en univers incertain”, 08/2015-03/2018, École Polytechnique. G. Desaulniers and M. Rekik.
- [5] BANCEL, LUCAS, “Fabrication d’horaires personnalisés maximisant le nombre d’heures travaillées par ordre de séniorité”, 01/2016-09/2017, École Polytechnique. G. Desaulniers.
- [6] DESFONTAINES, LUCIE, “Problème d’horaires d’autobus avec dépôts multiples et modification contrôlée des heures de début des voyages”, 08/2015-07/2017, École Polytechnique. G. Desaulniers.
- [7] ALTMAN, CLÉMENT, “Optimisation de tournées de véhicules avec contrainte de fragilité”, 08/2015-04/2017, École Polytechnique. G. Desaulniers and F. Errico.
- [8] SOUISSI, SARRA, “Ré-optimisation d’horaires de personnel en ajoutant des transferts entre départements”, 08/2014-12/2016, École Polytechnique. G. Desaulniers, F. Soumis.
- [9] RIOUX-FISET, LAURENCE, “Horaires mensuels en transport aérien avec équité”, 08/2014-08/2016, École Polytechnique. F. Soumis. G. Desaulniers.
- [10] MICHON-LACAZE, HÉLÈNE, “Élaboration de quarts de travail robustes aux perturbations de courte durée”, 01/2014-01-2016, École Polytechnique. G. Desaulniers.
- [11] FROGER, CAMILLE, “Mise à jour des horaires de personnel travaillant sur des quarts”, 09/2013-05/2015, École Polytechnique. F. Soumis et G. Desaulniers.

- [12] MUNEZERO, EMELYNE, “Une heuristique en deux phases pour la confection d’horaires de personnel avec transferts inter-départementaux d’employés”, 05/2012-12/2014, École Polytechnique. G. Desaulniers and C. Contardo.
- [13] LEULIET, ALEXANDRE, “Nouvelles coupes pour le problème de tournées de véhicule avec demandes stochastiques”, 01/2013-12/2014, École Polytechnique. G. Desaulniers, W. Rei, and O. Jabali.
- [14] MARTIN, VINCENT, “Méthodes d’optimisation pour un problème stochastique d’horaire d’audiences judiciaires”, 08/2010-04/2013, École Polytechnique. G. Desaulniers, A. Hertz and R. Labib.
- [15] GAUVIN, CHARLES, “Un algorithme de génération de colonnes pour le problème de tournées de véhicules avec demandes stochastiques”, 08/2010-12/2012, École Polytechnique. G. Desaulniers and M. Gendreau.
- [16] DE FRÉMINVILLE, PIERRE, “Partitionnement d’une zone géographique en territoires homogènes et contigus”, 08/2010-04/2012, École Polytechnique. L.-M. Rousseau and G. Desaulniers.
- [17] PARENT, ÉRIC, “Génération des itinéraires potentiels des passagers dans un réseau de transport aérien”, 05/2008-04/2011, École Polytechnique. G. Desaulniers.
- [18] BENCHIMOL, PASCAL, “Couplage des méthodes d’agrégation dynamique de contraintes et de stabilisation pour résoudre le problème d’horaires de véhicule avec dépôts multiples”, 08/2009-04/2011, École Polytechnique. G. Desaulniers and J. Desrosiers.
- [19] VELUT, BERTRAND, “Application de la méthode IPS au problème de localisation d’entrepôts sans capacité”, 05/2009-10/2010, École Polytechnique. G. Desaulniers and F. Soumis.
- [20] HÉBERT-DESGROSEILLIERS, LUC, “Conception d’un plan de production minière avec rétroaction”, 08/2007-12/2009, École Polytechnique. M. Gamache and G. Desaulniers.
- [21] HAMMOUCHE, TOUFIK, “Une méthode heuristique pour l’affectation des avions aux vols avec contraintes d’entretien”, 01/2007-06/2009, École Polytechnique. G. Desaulniers.
- [22] NANTEL, JEAN-PHILIPPE, “Agrégation dynamique de contraintes pour la construction de blocs mensuels personnalisés avec équité”, 05/2007-04/2009, École Polytechnique. G. Desaulniers and A. Hertz.
- [23] BOUBAKER, KHALED, “Recherche tabou et agrégation dynamique de contraintes pour la construction d’horaires mensuels d’équipages aériens dans un contexte d’équité”, 01/2005-12/2006, École Polytechnique. G. Desaulniers and A. Hertz.
- [24] PEPIN, ANN-SOPHIE, “Comparaison de méthodes heuristiques pour le problème d’horaires de véhicules avec dépôts multiples”, 05/2005-12/2006, École Polytechnique. G. Desaulniers.
- [25] OMER, JÉRÉMY, “Méthode de réduction dynamique de contraintes pour un programme linéaire”, 01/2005-04/2006, École Polytechnique. G. Desaulniers and D. Orban.
- [26] MARIN, JULIE-MÉLISSA, “Stratégies d’accélération pour le problème de tournées de véhicule avec dépôts multiples”, 09/2003-08/2005, École Polytechnique. G. Desaulniers.
- [27] GOUAREF, SOUAD, “Stratégies d’accélération pour la construction des rotations d’équipages aériens”, 05/2003-08/2005, École Polytechnique. G. Desaulniers.
- [28] DEREU, GUILLAUME, “Comparaison d’une méthode de génération de colonnes et d’une méthode de recherche tabou pour le problème d’horaires avec dépôts multiples”, 01/2004-04/2005, École Polytechnique. G. Desaulniers and A. Hertz.
- [29] HIFI, NABILE, “Modèles de flot de passagers en transport aérien”, 01/2002-03/2005, École Polytechnique. G. Desaulniers and F. Soumis.
- [30] NDIKUMAGENGE, FABRICE, “Évaluation et ré-optimisation d’un horaire de vols”, 01/2001-12/2004, École Polytechnique. F. Soumis and G. Desaulniers.

- [31] BABA-HADJI, AHMED, “Extension des modèles de construction de quarts de travail au cas de fenêtres de pause multiples”, 09/2001-08/2004, École Polytechnique. G. Desaulniers and F. Soumis.
- [32] BOUCHARD, MATHIEU, “Optimisation des pauses dans le problème de fabrication des horaires avec quarts de travail”, 01/2002-08/2004, École Polytechnique. G. Desaulniers.
- [33] BODART, LOÏC, “Construction simultanée d’itinéraires d’autobus et d’horaires de chauffeurs”, 09/2002-07/2004, École Polytechnique. G. Desaulniers and J. Desrosiers.
- [34] BRAHAM, MOHAMED WALID, “Construction des rotations hebdomadaires d’avion”, 01/2001-12/2003, École Polytechnique. G. Desaulniers and M.S. Ouali.
- [35] ST-GERMAIN, JULIE, “Horaires personnalisés avec priorités: considération accrue des employés juniors”, 09/1999-05/2003, École Polytechnique. G. Desaulniers and F. Soumis.
- [36] LINGAYA, NORBERT, “Affectation des wagons aux trains de passagers dans un contexte opérationnel”, 09/1997-04/2003, École Polytechnique. G. Desaulniers and F. Soumis.
- [37] EL IDRISSE, TOURIA, “Amélioration de la méthode des compteurs pour la construction d’horaires personnalisés des agents de bord”, 09/1999-11/2002, École Polytechnique. F. Soumis and G. Desaulniers.
- [38] OMARI, ZOUBAIR, “Affectation des activités aux employés travaillant sur des quarts”, 09/1999-04/2002, École Polytechnique. G. Desaulniers and F. Soumis.
- [39] DUBOIS, MICHEL, “Planification stratégique en transport ferroviaire de passagers avec horaire fixe et horaire variable”, 01/1998-12/2001, École Polytechnique. G. Desaulniers and F. Soumis.
- [40] VATRI, ERIC, “Intégration de la génération de quarts de travail et de l’attribution d’activités”, 09/1999-12/2001, École Polytechnique. G. Desaulniers and F. Soumis.
- [41] VILLENEUVE, BRYAN, “Répartition et routage d’un système automatique de chariots à l’aide d’une méthode de génération de colonnes”, 09/1998-11/2000, École Polytechnique. A. Langevin and G. Desaulniers.
- [42] MOKE NLANDU, JEAN, “Prototype d’un système de conception dynamique de réseaux manufacturiers et logistiques”, 09/1997-10/1999, Université Laval. S. D’Amours and G. Desaulniers.
- [43] LASRY, ARIELLE, “Rotations d’équipage pour un transporteur aérien en milieu régional”, 09/1995-02/1997, École des Hautes Études Commerciales. J. Desrosiers and G. Desaulniers.
- [44] ROCHON, VIVIANE, “Ajustement des variables duales dans le contexte d’une méthode de génération de colonnes”, 09/1995-08/1997, École Polytechnique. F. Soumis and G. Desaulniers.
- [45] LAVIGNE, JUNE, “Le problème de tournées de véhicules avec fenêtres de temps et dépôts multiples”, 09/1993-05/1996, École Polytechnique. F. Soumis and G. Desaulniers.
- [46] GENTES, IANICK, “Construction d’itinéraires quotidiens et hebdomadaires d’une flotte d’avions hétérogène”, 01/1993-05/1996, École Polytechnique. F. Soumis. G. Desaulniers and J. Desrosiers.
- [47] HOYLE, DOUG, “A resource constrained multi-project scheduling problem at the Ship Repair Unit Atlantic”, 09/1993-05/1995, Collège Militaire Royal de St-Jean. G. Desaulniers.

Ph.D. students

- [1] EDOM, ÉLOÏSE, “Optimisation de l’horaire d’entretiens des groupes turbo-alternateurs d’un système hydro-électrique”, 05/2018-..., École Polytechnique. M. Anjos and G. Desaulniers.
- [2] MORABIT, MOUAD, “Apprentissage machine et génération de colonnes”, 01/2017-..., École Polytechnique. G. Desaulniers and A. Lodi.
- [3] HASSANI, RACHID, “Réoptimisation en temps réel d’un horaire de personnel”, 08/2015-..., École Polytechnique. I. Elhallaoui and G. Desaulniers.

- [4] COSTA, LUCIANO, “Algorithmes de génération de colonnes pour des problèmes de tournées de véhicules complexes”, 08/2015-..., École Polytechnique. G. Desaulniers and C. Contardo.
- [5] BRETIN, ALEXIS, “Problèmes de livraison de colis postaux”, 08/2015-, École Polytechnique. L.-M. Rousseau and G. Desaulniers.
- [6] TAHIR, ADIL, “Algorithme du simplexe en nombres entiers avec décomposition combiné à la génération de colonnes”, 08/2014-..., École Polytechnique. I. Elhallaoui and G. Desaulniers.
- [7] ATTIA, DALIA, “Horaires de personnel dans un contexte mutli-départements et multi-sites”, 08/2014-..., École Polytechnique. F. Soumis and G. Desaulniers.
- [8] ER-RBIB, SAFAE, “Construction d’horaires de chauffeurs d’autobus”, 05/2014-..., École Polytechnique. G. Desaulniers, I. Elhallaoui, and M. Saddoune.
- [9] QUESNEL, FRÉDÉRIC, “Construction de rotations d’équipages aériens avec contraintes sur les horaires personnalisés mensuels”, 05/2014-..., École Polytechnique. F. Soumis and G. Desaulniers.
- [10] RODRÍGUEZ, JESUS ANDRES, “Mixed-integer programming approaches for hydropower generator maintenance scheduling”, 09/2013-08/2018, École Polytechnique. M. Anjos and G. Desaulniers.
- [11] LEHOULLIER, THIBAUT, “Modèles déterministes et stochastiques pour la résolution de conflits entre aéronefs”, 05/2012-12/2015, École Polytechnique. F. Soumis and G. Desaulniers.
- [12] CHERKESLY, MARILÈNE, “Le problème de tournées de véhicules avec cueillettes, livraisons, fenêtres de temps et contraintes de manutention”, 05/2011-06/2015, École Polytechnique. G. Desaulniers and G. Laporte.
- [13] LASALLE IALONGO, DAVID, “Problème d’affectation des types d’avion aux vols : optimisation robuste et intégration de la demande de passagers”, 08/2008-11/2014, École Polytechnique. G. Desaulniers.
- [14] GROIEZ, MOUNIRA, “Étude et séparation des inégalités valides pour des problèmes de partitionnement et de couverture”, 01/2007-06/2013, École Polytechnique. G. Desaulniers and O. Marcotte.
- [15] ELAHIPANAH, MAHSA, “Task scheduling and activity assignment to work shifts with schedule flexibility and employee preference satisfaction”, 01/2007-11/2012, École Polytechnique. G. Desaulniers.
- [16] LEQUY, QUENTIN, “Affectation d’activités et de tâches à des quarts de travail fixés”, 08/2007-05/2011, École Polytechnique. G. Desaulniers and F. Soumis.
- [17] PRESCOTT-GAGNON, ÉRIC, “Méthodes hybrides basées sur la génération de colonnes pour des problèmes de tournées de véhicules avec fenêtres de temps”, 08/2007-01/2011, École Polytechnique. L.-M. Rousseau and G. Desaulniers.
- [18] SADDOUNE, MOHAMMED, “Optimisation simultanée des rotations et des blocs mensuels des équipages aériens”, 08/2005-04/2010, École Polytechnique. F. Soumis and G. Desaulniers.
- [19] LACASSE-GUAY, ÈVE, “Affectation des types d’avions aux vols avec contraintes d’entretien”, 09/2003-08/2009, École Polytechnique. G. Desaulniers and F. Soumis.
- [20] BOUCHARD, MATHIEU, “Coloration de graphes et attribution d’activités dans des quarts de travail”, 08/2004-09/2008, École Polytechnique. G. Desaulniers and A. Hertz.
- [21] DIOP, MBAYE, “Affectation de locomotives aux trains avec contraintes d’entretien et de carburant”, 09/2000-08/2006, École Polytechnique. G. Desaulniers.
- [22] ELHALLAOUI, ISSMAIL, “Agrégation dynamique de contraintes de partitionnement en génération de colonnes”, 09/2002-07/2006, École Polytechnique. F. Soumis and G. Desaulniers.
- [23] HAMDOUNI, MOHAMED, “Planification robuste pour le stationnement des autobus dans un dépôt”, 09/2000-04/2006, École Polytechnique. F. Soumis and G. Desaulniers.

- [24] ROUILLON, STÉPHANE, “Réduction des sauts d’intégrité dans les problèmes d’affectation de locomotives pour un transporteur de marchandises”, 09/1997-08/2004, École Polytechnique. G. Desaulniers and F. Soumis.
- [25] BÉLANGER, NICOLAS, “Contributions au problème d’affectation des types d’avion”, 09/1997-04/2004, École Polytechnique. F. Soumis. G. Desaulniers and J. Desrosiers.

Postdoc students

- [1] ROSTAMI, BORZOU, “The vehicle routing problem with stochastic and correlated travel times”, 09/2016-.... F. Errico, G. Desaulniers and A. Lodi.
- [2] BÜRGGY, REINHARD, “Robust shift scheduling”, 06/2017-05/2018. G. Desaulniers.
- [3] PECIN, DIEGO, “Branch-price-and-cut for time-constrained vehicle routing problems”, 08/2014-08/2016. G. Desaulniers and C. Contardo.
- [4] DAYARIAN, IMAN, “Combined vehicle routing and production scheduling”, 02/2014-12/2014. G. Desaulniers.
- [5] ELAHIPANAH, MAHSA, “Shift scheduling with preferences”, 12/2012-06/2013. G. Desaulniers and F. Soumis
- [6] ERRICO, FAUSTO, “Vehicle routing with stochastic service times”, 04/2012-08/2013. G. Desaulniers, M. Gendreau, L.-M. Rousseau, W. Rei.
- [7] AZI, NABILA, “Personalized shift scheduling”, 07/2012-06/2013. G. Desaulniers and F. Soumis.
- [8] CONTARDO, CLAUDIO, “Multi-department shift scheduling with inter-department transfers”, 01/2012-06/2012. G. Desaulniers.
- [9] SADDOUNE, MOHAMMED, “Dynamic constraint aggregation for aircrew scheduling”, 2010-2011 (4 months). F. Soumis and G. Desaulniers.
- [10] LACASSE-GUAY, ÈVE, “Activity assignment with flexibility in work shifts”, 2009-2010 (6 months). G. Desaulniers and F. Soumis.
- [11] METRANE, ABDELMOUTALIB, “Improved primal simplex algorithm”, 2007-2010 (3 years). F. Soumis and G. Desaulniers.
- [12] ELHALLAOUI, ISSMAIL, “Dynamic constraint aggregation and improved primal simplex algorithm”, 2006-2010 (4 years). F. Soumis and G. Desaulniers.

Visiting graduate students

- [1] MONARDES, CARLOS, “Winery capacity planning”, September-December 2018, Universidad Católica del Norte, Chile. G. Desaulniers, C. Contardo, and F. Errico.
- [2] PIEROTTI, JACOPO, “The electric vehicle routing problem with time windows and heterogeneous recharging stations”, November-December 2017, Politecnico di Milano, Milano, Italy. F. Errico and G. Desaulniers.
- [3] BALLER, ANNELIEKE, “The inventory routing problem with demand moves”, October-December 2017, Vrije University, Amsterdam, Netherlands. G. Desaulniers.
- [4] DÖGE, ALEXANDER, “The vehicle routing problem with time windows and flexible delivery locations”, September-December 2017, Technical University of Munich, Germany. G. Desaulniers.
- [5] DALMEIJER, KEVIN, “The time window assignment vehicle routing problem”, March-June 2017, Erasmus University of Rotterdam, Rotterdam, Netherlands. G. Desaulniers.

- [6] KOZA, DAVID FRANZ, “Liner shipping network design with transit time constraints”, February-August 2016, Technical University of Denmark, Lingby, Denmark. G. Desaulniers.
- [7] FINK, MARTIN, “Column generation for vehicle routing problems with multiple synchronization constraints”, June-September 2015, Technical University of Munich, Germany. F. Soumis and G. Desaulniers.
- [8] FINK BAGGER, NIELS-CHRISTIAN, “Course timetabling with curriculum-based constraints”, March-July 2015, Technical University of Denmark, Denmark. G. Desaulniers and J. Desrosiers.
- [9] VEENSTRA, MARJOLEIN, “Handling operations in a pickup and delivery vehicle routing problem”, January 2015, University of Groningen, Netherlands. G. Desaulniers and G. Laporte.
- [10] BREIER, HEIKO, “Split delivery vehicle routing with alternative periods”, 2013 (3 months), Karlsruhe Institute of Technology, Germany. G. Desaulniers and J. Desrosiers.
- [11] MAHER, STEPHEN, “Robust aircraft maintenance scheduling”, 2012 (3 months), University of New South Wales, Sydney, Australia. F. Soumis and G. Desaulniers.
- [12] SPLIET, REMY, “Time window assignment in vehicle routing problems with time windows”, 2012 (2 months), Erasmus University of Rotterdam, Rotterdam, Netherlands. G. Desaulniers.
- [13] BROUER, BERIT D., “Network design for liner shipping”, 2011 (4 months), University of Copenhagen, Copenhagen, Denmark. G. Desaulniers.
- [14] RAKKE, JØRGEN GLOMVIK, “Branch-price-and-cut for a maritime inventory problem”, 2010-2012 (7 months), Norwegian University of Science and Technology, Trondheim, Norway. G. Desaulniers.
- [15] STÅLHANE, MAGNUS, “Ship routing and scheduling with split loads”, 2009-2011 (5 months), Norwegian University of Science and Technology, Trondheim, Norway. G. Desaulniers and J.F. Cordeau.
- [16] POTTHOFF, DANIEL, “Railway crew rescheduling”, 2008 (5 weeks), Erasmus University, Rotterdam, Netherlands. G. Desaulniers.
- [17] GRØNHAUG, ROAR, “LNG ship inventory routing”, 2007-2008 (2 months), Norwegian University of Science and Technology, Trondheim, Norway. G. Desaulniers.
- [18] SPOORENDONK, SIMON, “Vehicle routing and branch-price-and-cut”, 2007-2009 (8 months), University of Copenhagen, Copenhagen, Denmark. G. Desaulniers and J. Desrosiers.

Undergraduate student internships

- [1] DOSSIN, ALEXANDRE, “Problème de tournées de véhicules avec dépôt mobile”, 03/2017-08/2017, École Nationale de l’Aviation Civile, Toulouse, France. G. Desaulniers et M. Cherkesly.
- [2] MORABIT, MOUAD, “Construction de territoires pour la livraison de colis postaux avec courbes d’alimentation”, 04/2016-09/2016, École Nationale des Sciences Appliquées de Khouribga, Maroc. G. Desaulniers and L.-M. Rousseau.
- [3] BRETIN, ALEXIS, “Construction d’une tournée de livraison de colis postaux”, 03/2015-08/2015, École des Mines de Nantes, France. L.-M. Rousseau and G. Desaulniers.
- [4] SÂADI, CHÉRIFA, “Réoptimisation de l’horaire d’un employé en surtemps”, 03/2015-09/2015, École Nationale des Sciences de l’Informatique, Tunisia. G. Desaulniers.
- [5] COURTEILLE, PIERRE, “Génération dynamique des services de vol pour la construction de rotations d’équipages”, 03/2015-09/2015, Université de Montpellier 2, France. F. Soumis and G. Desaulniers.
- [6] GABET, PIERRE, “Tournées de véhicules pour la livraison de colis postaux”, 04/2015-08/2015, École Polytechnique. G. Desaulniers and L.-M. Rousseau.

- [7] NONEZ, FABRICE, “Méthode d’apprentissage pour sélectionner les variables de branchement”, 05/2014-08/2014, École Polytechnique. R. Labib and G. Desaulniers.
- [8] BUVRY, JEAN, “Tournées de véhicules avec livraisons partagées et contraintes de synchronisation”, 04/2013-09/2013, ENSEEIHT, Toulouse, France. G. Desaulniers.
- [9] SCHAKENBOS, MAAIKE, “A column generation heuristic for split delivery vehicle routing”, 08/2009-12/2009, University of Technology Eindhoven, Netherlands. G. Desaulniers and O. Marcotte.
- [10] BÉLANGER-ROY, BENOÎT, “Construction de tournées de véhicules pour la livraison de propane”, 05/2009-08/2009, École Polytechnique. G. Desaulniers.
- [11] ZILLE, PASCAL, “Routage de bateaux avec contraintes d’inventaire pour du gaz naturel liquéfié”, 06/2008-09/2008, INSA Rouen. G. Desaulniers.
- [12] LEQUY, QUENTIN, “Méthode à grands voisinages pour l’affectation des activités dans des quarts de travail”, 04/2006-10/2006, Université de Clermont-Ferrand, France, F. Soumis and G. Desaulniers.
- [13] BODART, LOÏC, “Construction simultanée d’itinéraires d’autobus et d’horaires de chauffeurs”, 03/2002-08/2002, ENSIAME, Université de Valenciennes. G. Desaulniers.
- [14] HUGUET, GREGORY, “Minimisation du nombre de mises en place des émetteurs/récepteurs lors de l’inspection d’un barrage hydro-électrique à l’aide d’un sous-marin robotisé”, 03/1999-06/1999, Université d’Artois, pôle de Béthune, France. G. Desaulniers, J. Renaud and B. Montreuil.
- [15] CARLE, THIERRY, “Minimisation du nombre de locomotives chez VIA Rail”, 09/1997-05/1998, École Polytechnique. G. Desaulniers.
- [16] TERMIGNON, EDOUARD, “Optimisation d’un logiciel de plus court chemin”, 01/1995-05/1995, École Nationale Supérieure de Physique, Strasbourg. G. Desaulniers.

Doctoral thesis examination committees

- [1] OSSAMA, M., “A multi-sector planning support model for en route air traffic control”, École Polytechnique, Montréal, 2017.
- [2] FINK, M., “The vehicle routing problem with worker and vehicle synchronization: Metaheuristic and branch-and-price approaches”, Technical University of Munich, Germany, 2016.
- [3] SÉGUIN, S., “Optimisation stochastique de la répartition spatio-temporelle d’un volume d’eau aux groupes turbo-alternateurs d’un système de production hydroélectrique”, École Polytechnique, Montréal, 2016.
- [4] ZAGHROUTI, A., “Algorithme du simplexe en nombres entiers avec décomposition”, École Polytechnique, Montréal, 2016.
- [5] RESTREPO-RUIZ, M.I., “Grammar-based decomposition methods for multi-activity tour scheduling”, École Polytechnique, Montréal, 2015.
- [6] MAAZOUN, W., “Conception et analyse d’un système d’optimisation de plans de vol pour les avions”, École Polytechnique, Montréal, 2015.
- [7] SPLIET, R., “Vehicle routing with uncertain demand”, Erasmus University Rotterdam, Rotterdam, Netherlands, 2013.
- [8] TRESOLDI, E., “Location and distribution problems: A general approach”, Università degli studi di Milano, Milano, Italy, 2011.
- [9] CÔTÉ, M.-C., “Utilisation de langages formels pour la modélisation et la résolution de problèmes de planification de quarts de travail”, École Polytechnique, Montréal, 2010.

- [10] HENNIG, F., “Optimization in maritime transportation: Crude oil tanker routing and scheduling”, Norwegian University of Science and Technology (NTNU), Trondheim, Norway, 2010.
- [11] RAYMOND, V., “Un algorithme du simplexe primal amélioré pour des programmes linéaires dégénérés”, École Polytechnique, Montréal, 2009.
- [12] DUMAS, J., “Un modèle de flot de passagers et son intégration au problème d’affectation de flotte en transport aérien”, École Polytechnique, Montréal, 2008.
- [13] BELHAÏZA, S., “Modélisation, énumération et raffinement d’équilibres en théorie des jeux”, École Polytechnique, Montréal, 2008.
- [14] BARIL, C., “Optimisation simultanée des caractéristiques de la qualité d’un produit en environnement distribué”, École Polytechnique, Montréal, 2008.
- [15] ANDERSEN, J., “New service network design models for intermodal freight transportation”, Norwegian University of Science and Technology (NTNU), Trondheim, Norway, 2008.
- [16] MILADI, Y., “Agrégation de contraintes de ressource dans un problème de plus court chemin”, École Polytechnique, Montréal, 2007.
- [17] REKIK, M., “Construction d’horaires de travail dans des environnements hautement flexibles”, École Polytechnique, Montréal, 2006.
- [18] CORRÉA, A.I., “Approches hybrides pour des problèmes intégrés d’ordonnancement et de routage de véhicules sans conflits”, École Polytechnique, Montréal, 2005.
- [19] GÉLINAS, S., “Problèmes d’ordonnancement”, École Polytechnique, Montréal, 2004.
- [20] DÉGILA, J., “Design de réseaux agiles photoniques multidimensionnels pour l’Internet de prochaine génération”, École Polytechnique, Montréal, 2004.
- [21] HUISMAN, D., “Integrated and Dynamic Vehicle and Crew Scheduling”, Erasmus University of Rotterdam, Rotterdam, Netherlands, 2004.
- [22] RATSIRAHONANA, L., “Modèles et algorithmes de résolution du problème de chargement des avions”, École Polytechnique, Montréal, 2003.
- [23] STOJKOVIC, G., “Gestion des avions et des équipages durant le jour d’opération”, École Polytechnique, Montréal, 1998.
- [24] MONTULET, P., “Rangement et manutention dans les entrepôts: Optimisation des charges moyenne et maximale”, École Polytechnique, Montréal, 1996.
- [25] GAMACHE, M., “Fabrication d’horaires mensuels pour les membres d’équipages en transport aérien”, École Polytechnique, Montréal, 1995.

Evaluation of articles

Transportation Science; Computers & OR; EJOR; Networks; Operations Research; Journal of Heuristics; Journal of Scheduling; International Transactions of Operations Research; Annals of OR; Computers and Industrial Engineering; International Journal of Flexible Manufacturing Systems; INFOR; Naval Research Logistics.

Organizing committees

- [1] Column Generation, Búzios, Brazil, 2016.
- [2] School on Column Generation, Paris, France, 2014.
- [3] Column Generation, Bromont, Canada, 2012.

- [4] Summer School on Column Generation, Darmstadt Technical University, Darmstadt, Germany, 2010.
- [5] Column Generation, Aussois, France, 2008.
- [6] Summer School on Column Generation, École Polytechnique, Montréal, 2006.
- [7] Colloquium of GERAD's 25th Anniversary, HEC Montréal, Montréal, Canada, 2005.
- [8] Optimization Days, HEC Montréal, Montréal, Canada, 2005.
- [9] Thematic Workshop on Optimization in Public Transit, GERAD, Montréal, Canada, 2004.
- [10] Optimization Days, HEC Montréal, Montréal, Canada, 1997.

Scientific program committees

- [1] TRISTAN X, Hamilton Island, Australia, 2019.
- [2] ODYSSEUS, Cagliari, Italy, 2018.
- [3] TRISTAN IX, Oranjestad, Aruba, 2016.
- [4] ODYSSEUS, Ajaccio, France, 2015.
- [5] TRISTAN VIII, San Pedro de Atacama, Chile, 2013.
- [6] ODYSSEUS, Mykonos, Greece, 2012.
- [7] TRISTAN VII, Tromsø, Norway, 2010.
- [8] ATMOS, Universität Karlsruhe, Germany, 2008.