UNIVERSIDADE DE SÃO PAULO – ESCOLA POLITÉCNICA
Pós-Graduação: Engenharia Química, 3º Período 2020

PQI-5884: Programação Inteira Mista aplicada à Otimização de Processos

Bibliografia Indicada

<u>1) Otimização em Engenharia</u>

Biegler, L.T.; Grossmann, I.E.; Westerberg, A.W. *Systematic methods of chemical process design.* Upper Saddle River: Prentice Hall PTR, 1997. ★
[EPQI 66.02^B475s]

Bryson, A.E. *Dynamic Optimization.* Menlo Park: Addison Wesley Longman, 1999.
[EPQI 519.851^B848d]

Edgar, T.F.; Himmelblau, D.M., Lasdon, L.S. *Optimization of chemical processes*, 2nd ed. New York: McGraw-Hill, 2001. ★
[EPQI 66.02^Ed34o2]

Edgar, T.F.; Himmelblau, D.M. *Optimization of chemical processes.* New York: McGraw-Hill, 1988. ★
[EPQI, EPMT 66.02^Ed34o]

Floudas, C.A. *Optimization in chemical engineering.* Basel: J.C. Baltzer AG, 1993. ★
[EPRO 65.012.122^An72^v.42]

Gero, J.S. (ed) *Design optimization.* Orlando: Academic Press, 1985.
[IME QA399.C3^G377d]

Grossmann, I.E. Mixed-integer programming approach for the synthesis of integrated process flowsheets. *Computers and chemical engineering* 9(5), 463-482, 1985.
[EPQI]

Grossmann, I.E.; Biegler, L.T. Optimizing Chemical Processes. *Chemtech*, 12, p.27-35, 1995.
[webpage]

Haftka, R.T.; Gürdal, Z. *Elements of structural optimization*, 3rd ed. Boston: Kluwer Academic Publishers, 1992.
[EPQI, EPMN 519.851^H119e3]

Johnson, R.C. *Mechanical design synthesis with optimization applications.* New York: Van Nostrand, 1971.
[EPMN 621.001.1^J636m]

Papalambros, P.Y., Wilde, D.J. *Principles of optimal design: modeling and computation.* Cambridge: Cambridge University Press, 1988. ★
[EPQI, EPMN 519.851^P197p]

Reklaitis, G.V.; Ravindran, A.; Ragsdell, K.M. *Engineering optimization: methods and applications*. 2nd ed. Hoboken: John Wiley & Sons, 2006. ★
[IME QA399^R256e] [EPQI, EPMN 62^R272e]

<u>2) Programação Linear e Programação Matemática</u>

Bazaraa, M.S.; Jarvis, J.J.; Sherali, H.D. *Linear programming and network flows*, 2nd ed. New York: John Wiley, 1990. ★
[EPQI, EPMN, EPRO 519.852^B347L2]

Hillier, F.S.; Lieberman, G.J. *Introduction to operations research*, 6th ed. New York: McGraw-Hill, 1995.
[EPRO, EPEC 65.012.122^H558i6]

Nemhauser, G.L.; Rinnooy-Kan, A.H.G.; Todd, M.J. (eds) *Optimization. Handbooks In Operations Research And Management Science*; 1. Amsterdam: Elsevier, 1989. ★
[EPQI, EPRO 519.851^N343o]

Minoux, M. *Mathematical programming: theory and algorithms.* New York: John Wiley, 1986.
[IME QA390^M666pi]

Murty, K.G. *Linear programming.* New York: Wiley, 1983.
[EPRO 519.852^M969L; EPEC 65.012.122^M969L]

Williams, H.P. *Model building in mathematical programming*, 3rd ed. New York: Wiley, 1990.
[EPRO 519.85^W672m3]

Wright, S.J. *Primal-dual interior-point methods.* Philadelphia: Society for Industrial and Applied Mathematics, 1997.
[EPQI 519.85^W936p]

3) Programação Não-Linear

Avriel, M. *Nonlinear programming: analysis and methods.* Englewood Cliffs: Prentice-Hall, 1976.
[EPRO 519.853^Av84n]

Bazaraa, M.S.; Sherali, H.D.; Shetty, C.M. *Nonlinear programming: theory and algorithms*, 3rd ed. Hoboken: Wiley-Interscience, 2006. ★
[EPEC /519.853^B347n3] [EPQI, EPRO, EPMN 519.853^B347n2]

Fletcher, R. *Practical methods of optimization*. 2nd ed.. Chichester: Wiley, 2000. ★
[EPQI, EPRO, EPEL 519.851^F637p2]

Nash, S.G.; Sofer, A. *Linear and nonlinear programming*. New York: McGraw-Hill, 1996. ★
[EPQI /519.852^N177L]

Gill, P.E.; Murray, W.; Wright; M.H. *Practical optimization.* London: Academic Press, 1981. ★
[EPQI, EPMN 519.851^G41p]

4) Programação Inteira

Garfinkel, R.S.; Nemhauser, G.L. *Integer programming.* New York: Wiley, 1972.
[EPRO 519.851^G18i]

Nemhauser, G.L.; Wolsey, L.A. *Integer and combinatorial optimization.* New York: Wiley, 1999. ★
[EPQI, EPRO, EPEC, EPEL 519.851^N343i]

Papadimitriou, C.H.; Steiglitz, K. *Combinatorial optimization: algorithms and complexity.* Mineola: Dover Publications, 1998.
[EPRO, EPEC 519.101^P197c]

Raman, R.; Grossmann, I.E. Relation Between MILP Modeling and Logical Inference for Chemical Process Synthesis. *Computers and chemical engineering* 15(2), pp.73-84, 1991.
[PQI, webpage]

Schrijver, A. *Theory of linear and integer programming.* Chichester: Wiley, 1986.
[EPEL 519.852^Sch74t]

5) Programação Mista-Inteira Não-Linear

Floudas, C.A. *Nonlinear and mixed-integer optimization.* New York: Oxford University Press, 1995. ★
[EPQI 519.851^F668n]

Gupta, O.K.; Ravindran, A. Branch and bound experiments in convex nonlinear integer programming. *Management Science* 31 (12), pp.1533-1546, 1985.
[EPRO, IME]

Geoffrion, A.M. Generalized Benders Decomposition. *Journal of optimization theory and applications* 10, pp.237-260, 1972.
[IME]

Duran, M.A.; Grossmann, I.E. An outer-approximation algorithm for a special class of mixed-integer nonlinear programs. *Mathematical Programming* 36, p.307, 1986
[IME]

Kocis, G.R.; Grossmann, I.E. Computational Experience With Dicopt Solving MINLP Problems In Process Systems-Engineering. *Computers and chemical engineering* 13 (3), pp.307-315, 1989.
[EPQI]

Viswanathan, J.; Grossmann, I.E. A Combined Penalty-Function And Outer-Approximation Method For Minlp Optimization. *Computers and chemical engineering* 14 (7), pp.769-782, 1990.
[EPQI]

★: recomendado

Bibliotecas:

EPQI = Escola Politécnica - Biblioteca de Engenharia Química

EPRO = Escola Politécnica - Biblioteca de Engenharia de Produção

EPMN = Escola Politécnica - Biblioteca de Engenharia de Mecânica, Naval e Oceânica

EPMT = Escola Politécnica - Biblioteca de Engenharia Metalúrgica

EPEL = Escola Politécnica - Biblioteca de Engenharia de Eletricidade

EPEC = Escola Politécnica - Biblioteca de Engenharia Civil

IME = Instituto de Matemática e Estatística