December 14, 2011

Errata and Supplements to
Matrices and Matroids for Systems Analysis (Springer, 2000)

- Page VII, line7: Bernhardt $\implies$ Bernhard

- Page 34, line 6: Put . (period) after "Proposition 2.1.2"

- Page 41, (2.16): Entry a_{41} is misplaced. The matrix should be:

$$
P_{\mathrm{r}}AP_{\mathrm{c}} =
\begin{array}{cc}
 & \\
 & \\
R_1 & 4' \\
 & 6' \\
R_2 & 2' \\
R_3 & 1' \\
R_4 & 5' \\
R_5 & 3'
\end{array}
\begin{array}{|cc|cc|cc|}
\multicolumn{1}{c}{\begin{array}{c}C_1\\4\end{array}} & \multicolumn{1}{c}{\begin{array}{c}\\6\end{array}} & \multicolumn{1}{c}{\begin{array}{c}C_2\\5\end{array}} & \multicolumn{1}{c}{\begin{array}{c}C_3\\2\end{array}} & \multicolumn{1}{c}{\begin{array}{c}C_4\\1\end{array}} & \multicolumn{1}{c}{\begin{array}{c}C_5\\3\end{array}} \\
\hline
a_{44} & a_{46} & & & a_{41} & \\
a_{64} & a_{66} & & & & a_{63} \\
\hline
 & & a_{25} & a_{22} & & \\
 & & & a_{12} & & a_{13} \\
 & & & & a_{51} & a_{53} \\
 & & & & & a_{33} \\
\hline
\end{array}
$$

- Page 41, last line:

  $C_1 \preceq C_2 \preceq C_3 \preceq C_5,\ C_4 \preceq C_5 \implies C_2 \preceq C_3 \preceq C_5,\ C_1 \preceq C_4 \preceq C_5$

- Page 46, Figure 2.2 (poorly printed):
  Broken lines should be connected line segments.

- Page 52, line 16 (poorly printed):
  $\mathcal{L}_1 \vee \mathcal{L}_2$ the sublattice generated by $\mathcal{L}_1 \cup \mathcal{L}_2$. The family $\Lambda(V; V_0, V_\infty)$ forms a lattice $(\Lambda(V; V_0, V_\infty), \vee, \wedge)$

- Page 142, line 26: $\mathbf{M}_Q \implies \mathbf{M}(Q)$

- Page 142, line -5: $\mathbf{M}_Q \implies \mathbf{M}(Q)$

- Page 143, line 12: $\partial(M \cap C_Q) \implies \partial M \cap C_Q$

- Page 144, line 5: $\partial(M \cap C_Q) \implies \partial M \cap C_Q$

- Page 435, Proposition 7.3.8:
  equal to the maximum size $\implies$ equal to twice the maximum size

- Page 455, Ref. 59 (I. S. Duff, A. M. Erisman, and J. K. Reid):
  Discrete $\implies$ *Direct*

- Page 455, Ref. 62 (I. S. Duff, R. G. Grimes, and J. G. Lewis):
  User's $\implies$ *Users'*
  TR/PA/92/86, 1992. $\implies$ TR/PA/92/86, CERFACS, 1992.

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- Page 456, Ref. 82 (S. Fujishige):
  2nd ed., Elsevier, Amsterdam, 2005.

- Page 456, Ref. 91 (J. F. Geelen):
  preprint, 1997. $\implies$ *Combinatorica*, **20** (2000), 61–70.

- Page 456, Ref. 93 (J. F. Geelen, S. Iwata, and K. Murota):
  RIMS Preprint No. 1149, Kyoto University, July 1997.
  $\implies$ *J. Combin. Theory*, **B88** (2003), 377–398.

- Page 459, Ref. 139 (S. Iwata):
  Erratum in *Combinatorica*, **16** (1996), 449.

- Page 459, Ref. 141 (S. Iwata):
  Final form in *Algorithmica*, **36** (2003), 331–341.

- Page 459, Ref. 142 (S. Iwata):
  Discrete Mathematics and Systems Science Research Report, Osaka University, in preparation.
  $\implies$ in preparation.

- Page 459, Ref. 146 (S. Iwata and K. Murota):
  RIMS Preprint, No. 1113, Kyoto University, 1996.
  $\implies$ *Math. Programming*, **A90** (2001), 353–371.

- Page 461, Ref. 189 (S. B. Maurer):
  129–237 $\implies$ 129–137.

- Page 463, Ref. 236 (K. Murota):
  L-convex functions and M-convex functions, in: *Encyclopaedia of Optimization* (P. M. Pardalos and C. A. Floudas, eds.), Kluwer Academic Publishers, Boston, 2000, to appear.
  $\implies$ *Discrete Convex Analysis*, SIAM Monographs on Discrete Mathematics and Applications, Vol. 10, Society for Industrial and Applied Mathematics, Philadelphia, 2003.

- Page 464, Ref. 252 (M. Newman):
  London $\implies$ New York

- Page 466, Ref. 299 (A. Shioura):
  Research Report, No. 21, Dept. Mech. Eng., Sophia University, 1998.
  $\implies$ *IEICE Trans. Fundment. Electr., Comm. Comput. Sci.*, **E83-A** (2000), 586–589.

- Page 467, Ref. 327 (J. W. van der Woude):
  1998. $\implies$ *SIAM J. Control Opt.*, **38** (1999), 1–21.

- Page 468, line 23:   (Add the following items)

References added for softcover edition

354. J. Geelen and S. Iwata: Matroid matching via mixed skew-symmetric matrices, *Combinatorica*, **25** (2005), 187–215.

355. N. J. A. Harvey, D. R. Karger, and K. Murota: Deterministic network coding by matrix completion, *Proc. Sixteenth Annual ACM-SIAM Symp. Disc. Algorithms*, (2005), 489–498.

356. N. J. A. Harvey, D. R. Karger, and S. Yekhanin: The complexity of matrix completion, *Proc. Seventeenth Annual ACM-SIAM Symp. Disc. Algorithms*, (2006), 1103–1111.

357. S. Iwata: Linking systems and matroid pencils, *J. Oper. Res. Soc. Japan*, **50** (2007), 315–324.

358. S. Iwata and R. Shimizu: Combinatorial analysis of singular matrix pencils, *SIAM J. Matrix Anal. Appl.*, **29** (2007), 245–259.

359. S. Iwata and M. Takamatsu: Computing the degrees of all cofactors in mixed polynomial matrices, *SIAM J. Disc. Math.*, **23** (2009), 647–660.

360. S. Iwata and M. Takamatsu: Index minimization of differential-algebraic equations in hybrid analysis for circuit simulation, *Math. Programming*, **121** (2010), 105–121.

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