Numerical and Symbolic Methods for Dynamic Optimization

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Errata

- The second paper in the list of publications on p. 12, "Symbolic elimination in dynamic optimization based on block-triangular ordering", has been accepted for publication in *Optimization Methods and Software* subject to minor revision.

- On p. 52, u_0 and u_1 should be replaced by $u_{1,0}$ and $u_{1,1}$, respectively.

- On p. 72, $\boldsymbol{L}$ and $\boldsymbol{U}$ should be replaced by $\boldsymbol{z}_L$ and $\boldsymbol{z}_U$, respectively.

- The incorrect initial guess was used in the experiments for Distillation Column in Chapter 6. This had significant impact on a few parts of Tables 6.7 and 6.10 and insignificant impact on Table 6.9 as well as Figures 6.1, 6.2, and 6.3. Correct versions of Tables 6.7 and 6.10 are shown below without sample standard deviation and number of iterations. The biggest difference is that SCHEME 0 no longer fails all instances and even outperforms some of the other schemes when using global collocation.

Table 6.7   Local collocation.

SCHEME	Success	Time
0	27.9%	12.8
1	88.8%	10.3
2	86.5%	11.6
3_{40}	94.2%	4.2
3_{30}	93.8%	4.5
3_{20}	93.2%	5.9
3_{10}	93.4%	4.1
3_5	94.3%	4.9
4_{40}	93.0%	3.9
4_{30}	94.1%	3.1
4_{20}	94.4%	2.7
4_{10}	94.7%	2.4
4_5	94.0%	3.6

Table 6.10   Global collocation.

SCHEME	Success	Time
0	95.6%	6.2
1	99.9%	10.0
2	100.0%	9.5
3_{40}	99.9%	3.2
3_{30}	99.9%	3.7
3_{20}	99.8%	2.7
3_{10}	100.0%	2.5
3_5	100.0%	2.9
4_{40}	100.0%	6.5
4_{30}	96.0%	5.0
4_{20}	100.0%	2.8
4_{10}	100.0%	4.0
4_5	99.9%	2.1

- The offline performance bottleneck discussed on p. 115 has largely been resolved. In particular, the offline time for Fourbar1 has been reduced from 43 s to 27 s and for Distillation Column the offline time has been reduced from 119 s to 26 s.