

Minor corrections and typos:

1. Definition of differential index in Section 2.1.2: Typically the differentiation index is defined to be the **minimum number** of differentiations needed to transform the DAE to its underlying ODE.
2. page 13, line 15: ... reduce the system to DAEs ... (delete “a”)
3. page 26, text below index-2 DAE and index-3 DAE: The Jacobian  $g_y f_z$  is assumed to be non-singular for all  $t$  **and all**  $x$  **and**  $z$ . Likewise  $h_y g_x f_z$  is non-singular for all  $t$  **and all**  $x, y, z$ .
4. In Section 2.2.1.1. the code GENDA by Mehrmann/Kunkel could be added, see <https://www3.math.tu-berlin.de/multiphysics/Software/GENDA/>
5. page 47, Definition 4:  $D \in \mathbb{R}^{m \times m}$  (instead of  $m \times n$ )
6. page 48, lines 1,2:  $10^{20}$  instead of  $10^{-20}$ .
7. page 48, Example 16 and Figure 3.1: number of non-zero values is 1910 in Example 16 and 1887 in Figure 3.1. Please unify.
8. page 58, in the middle:  $NA = U_1 Q^\top$  instead of  $NA = U_1$
9. page 59, Algorithm 9: The permutation matrices  $P$  and  $Q$  depend on  $t$  and  $x$  as well (could be added to make the presentation consistent).
10. The example in 4.2.3 contains some errors, I believe, and should be revised.
11. page 64, 4.4.3: “Proving” instead of “Proofing”
12. page 71, (5.2):  $\Phi_q(q, t)p$  ( $p$  is missing)
13. page 71, line below (5.3): The notation  $\Phi_{qt}$  can be confused with the second partial derivative of  $\Phi$  w.r.t.  $q$  and  $t$ , but here the meaning is different and  $\Phi_{qt}$  should also depend on either  $q'$  or  $p$ .
14. page 74, line 4 of text below figure: reference should be to Fig. 5.2 (not 5.1)