Corrigenda for "Distributional differential algebraic equations"

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November 22, 2021

p. 46 In ninth line from the bottom it should read δ_t instead of $\delta_t^{(n)}$

p. 61 The $\boxed{\text{qed}}$-symbol should be at the end of the equivalence

p. 95 In Example 3.4.7(i) it should be N^{i+1} instead of N^i and there is minus sign missing in the solution formula, i.e. it should read

$$x_{[t_0,\infty)} = -\sum_{i=0}^{n-1} N^{i+1} x(t_0-)\delta_{t_0}^{(i)}.$$

Sec. 4.2.1 see also Vinicius A. Armentano "The pencil (sE-A) and controllability-observability for generalized linear systems: A geometric approach", Siam J. Control and Optimization 24(4), p. 616–638

p. 83 In the fifth line from below it should be $\dot{x}_{[t_0,\infty)} = (Ax+f)_{[t_0,\infty)}$ instead of $\dot{x}_{[t_0,\infty)} = (Ax)_{[t_0,\infty)}$.

p. 106 The name of Lemma 4.2.3 should read "Invertibility of $[V,W]$ and $[EV,AW]$", furthermore the **proof is not complete**. The complete proof reads as:

> Invertibility and existence of T follows from Lemma 4.2.2(ii). To show invertibility of $[EV,AW]$ it is first shown that EV and AW each have full column rank. Therefore, consider $x \in \mathbb{R}^{n_1}$ and $y \in \mathbb{R}^{n-n_1}$ with $EVx = 0$ and $AWy = 0$. Invoking Lemma 4.2.2(ii) yields $Vx \in \mathcal{V}^* \cap \ker E = \{0\}$ and $Wy \in \mathcal{W}^* \cap \ker A = \{0\}$. Since V and W have full column rank it follows that $x = 0$ and $y = 0$, hence EV and AW have full rank. It remains to show that $E\mathcal{V}^* \cap A\mathcal{W}^* = \{0\}$. Therefore, consider $x \in E\mathcal{V}^* \cap A\mathcal{W}^*$. Then there exists $v \in \mathcal{V}^*$ and $w \in \mathcal{W}^*$ with $Ev = x = Aw$, in particular $v \in E^{-1}(A\mathcal{W}^*) = \mathcal{W}^*$. Hence $v \in \mathcal{V}^* \cap \mathcal{W}^* = \{0\}$ and $x = 0$ follows.

p. 112 several Js are missing, it should read:

> hence, invoking Corollary 2.3.5,
>
> $$\big(v(t+) - v(t-)\big)\delta_t + \sum_{k=0}^{K} a_k \delta_t^{(k+1)} = \sum_{k=0}^{K} J a_k \delta_t^{(k)},$$
>
> or
>
> $$0 = \sum_{k=0}^{K+1} b_k \delta_t^{(k)},$$
>
> where $b_{N+1} = a_N$, $b_k = a_{k-1} - Ja_k$, $k = N, \ldots, 1$, and $b_0 = v(t+) - v(t-) - Ja_0$.

p. 114 in the third and fourth equation it should read n_2 instead of n_1, and, in line seven, extend 'since N is nilpotent' to "since $N \in \mathbb{R}^{n_2 \times n_2}$, $n_2 \in \mathbb{N}$, is nilpotent", finally, in the fifth equation, replace S by S^{-1}, i.e. it should read

> Repeating this process yields, since $N \in \mathbb{R}^{n_2 \times n_2}$, $n_2 \in \mathbb{N}$, is nilpotent,
>
> $$0 = N^{n_2}(w[t_i])^{(n_2)} = w[t_i] - \sum_{k=0}^{n_2-1} N^{k+1}\big(w(t_i+) - w(t_i-)\big)\delta_{t_i}^{(k)}$$
>
> or
>
> $$w[t_i] = \sum_{k=0}^{n_2-1} N^{k+1}\big(w(t_i+) - w(t_i-)\big)\delta_{t_i}^{(k)}.$$
>
> Assumption (A1) and Theorem 4.2.8 yield
>
> $$\begin{aligned} 0 \overset{\text{(A1)}}{=} E_p(I - \Pi_p)x(t_i-) \overset{\text{Thm. 4.2.8}}{=} & E_p\big((x(t_i-) - x(t_i+)\big) \\ & = S^{-1}\begin{bmatrix} I & 0 \\ 0 & N \end{bmatrix}\begin{pmatrix} v(t_i-) - v(t_i+) \\ w(t_i-) - w(t_i+) \end{pmatrix} \end{aligned}$$

p. 144 in the second last line it should read "$\delta_{t_0}^{(i)}$" instead of '$\delta_{t_0}^{i}$'

p. 145 in the first line it should read "$\delta_{t_0}^{(i+1)}$" instead of '$\delta_{t_0}^{i+1}$'

p. 149 in Prop. 5.2.4 the first 'impulse-observable' should read "jump-observable", furthermore in (5.2.3) it should read "$x[t_0] = 0$" instead of '$w[t_0] = 0$'

p. 164 just before Theorem 5.3.12 it should read "characterizations" instead of "characterization"

p. 167 in the sixth line of Remark 5.3.14 it should read x_2 instead of ω and in the last line of this page it should read x_4 instead of ω