

Additional notes related to the PhD thesis:
Multi-Agent Model Predictive Control
with Applications to Power Networks

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- In Section 2.3. “Interconnected control problems”, Equation (2.10) should be replaced by:

$$\tilde{\mathbf{w}}_{\text{out},i}(k) = \tilde{\mathbf{K}}_i [\tilde{\mathbf{x}}_i(k)^\top \quad \tilde{\mathbf{u}}_i(k)^\top \quad \tilde{\mathbf{y}}_i(k)^\top]^\top$$

- In Section 2.4.4. “Parallel versus serial schemes”, in the paragraph “Parallel implementation”, the following text:

- 2 (b) For all agents $i \in \{1, \dots, n\}$, *at the same time*, agent i solves the problem (2.21) to determine $\tilde{\mathbf{x}}_i(k+1)^{(s)}$, $\tilde{\mathbf{u}}_i(k)^{(s)}$, $\tilde{\mathbf{w}}_{\text{in},ji}(k)^{(s)}$, $\tilde{\mathbf{w}}_{\text{out},ji}(k)^{(s)}$, and sends to agent $j \in \mathcal{N}_i$ the computed values $\tilde{\mathbf{w}}_{\text{out},ji}(k)^{(s)}$.

should be replaced by

- 2 (b) For all agents $i \in \{1, \dots, n\}$, *at the same time*, agent i solves the problem (2.21) to determine $\tilde{\mathbf{x}}_i(k+1)^{(s)}$, $\tilde{\mathbf{u}}_i(k)^{(s)}$, $\tilde{\mathbf{w}}_{\text{in},ji}(k)^{(s)}$, $\tilde{\mathbf{w}}_{\text{out},ji}(k)^{(s)}$, and sends to agent $j \in \mathcal{N}_i$ the computed values $\tilde{\mathbf{w}}_{\text{out},ji}(k)^{(s)}$ and $\tilde{\mathbf{w}}_{\text{in},ji}(k)^{(s)}$.

- In Section 2.4.4. “Parallel versus serial schemes”, in the paragraph “Serial implementation”, the following text:

... and given the previous information $\tilde{\mathbf{w}}_{\text{prev},ij}(k) = \tilde{\mathbf{w}}_{ij}^{(s-1)}(k)$ of the *last* iteration $s-1$...

should be replaced by

... and given the previous information $\tilde{\mathbf{w}}_{\text{in,prev},ij}(k) = \tilde{\mathbf{w}}_{\text{in},ij}(k)^{(s-1)}$, $\tilde{\mathbf{w}}_{\text{out,prev},ij}(k) = \tilde{\mathbf{w}}_{\text{out},ij}(k)^{(s-1)}$ of the *last* iteration $s-1$...

- In Section 2.4.4. “Parallel versus serial schemes”, in the paragraph “Serial implementation”, the following text:

- (ii) 2 For all agents $i = 1, \dots, n$, *one agent after another*, agent i determines $\tilde{\mathbf{x}}_i(k+1)^{(s)}$, $\tilde{\mathbf{u}}_i(k)^{(s)}$, $\tilde{\mathbf{w}}_{\text{in},ji}(k)^{(s)}$, $\tilde{\mathbf{w}}_{\text{out},ji}(k)^{(s)}$ by solving (2.21), and sends to agent $j \in \mathcal{N}_i$ the computed values $\tilde{\mathbf{w}}_{\text{out},ji}(k)^{(s)}$.

should be replaced by

- 2 (b) For all agents $i = 1, \dots, n$, *one agent after another*, agent i determines $\tilde{\mathbf{x}}_i(k+1)^{(s)}$, $\tilde{\mathbf{u}}_i(k)^{(s)}$, $\tilde{\mathbf{w}}_{\text{in},ji}(k)^{(s)}$, $\tilde{\mathbf{w}}_{\text{out},ji}(k)^{(s)}$ by solving (2.21), and sends to agent $j \in \mathcal{N}_i$ the computed values $\tilde{\mathbf{w}}_{\text{out},ji}(k)^{(s)}$ and $\tilde{\mathbf{w}}_{\text{in},ji}(k)^{(s)}$.

- (PMN) After equation (2.22) should follow:

Send $\tilde{\lambda}_{\text{in},ji}^{(s+1)}(k)$ to controller j and receive the multipliers from controller j to be used as $\tilde{\lambda}_{\text{out},ij}^{(s+1)}(k)$.

- (GB) In Section 5.6.1. “Steady-state characteristics of power networks”, paragraph “Transmission lines”, Equation (5.7), the term

$$+ z_{V,\iota} z_{V,\omega} \left(\frac{\eta_{R,\iota\omega}}{(\eta_{R,\iota\omega})^2 + (\eta_{X,\iota\omega})^2} \sin(z_{\theta,\iota} - z_{\theta,\omega}) \right)$$

should be

$$- z_{V,\iota} z_{V,\omega} \left(\frac{\eta_{R,\iota\omega}}{(\eta_{R,\iota\omega})^2 + (\eta_{X,\iota\omega})^2} \sin(z_{\theta,\iota} - z_{\theta,\omega}) \right)$$

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