Erratum: Observability implies observer design for switched linear systems

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1. In the formula for $P^m_1$, the subscript of the matrix $G$ must be changed from $G_j$ to $G_i$. The equation should thus appear as follows:

$$P^m_1 := (N^m_1)^\perp = R(G^T_1) + \sum_{i=2}^{m-1} \prod_{j=1}^{i-1} e^{A_j \tau_j} E_j^T R(G^T_i).$$

2. Equations (8) and (10) hold when all the matrices $E_i$ are invertible, and are not true in general otherwise. Another sufficient condition for (8) and (10) to hold is:

$$\ker E_i \subseteq \ker G_i \cap \bigcap_{j=i-1}^{2} \prod_{k=i-1}^{j} e^{A_{k+1} \tau_{k+1}} E_k \ker G_j, \quad \text{for all } i \geq 2,$$

(*)

where the left-hand side is simply $\{0\}$ whenever $E_i$ is invertible.

3. The invertibility of the jump maps $E_i$, or the condition $(*)$, must be included in Assumption 1 for the observer design to be valid.