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ON AN SVD-BASED ALGORITHM FOR IDENTIFYING META-STABLE STATES OF MARKOV CHAINS*

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Abstract. A Markov chain is a sequence of random variables $X = \{x_t\}$ that take on values in a state space $\mathcal{S}$. A meta-stable state with respect to X is a collection of states $\mathcal{E} \subseteq \mathcal{S}$ such that transitions of the form $x_t \in \mathcal{E}$ and $x_{t+1} \notin \mathcal{E}$ are exceedingly rare. In Fritzsche et al. [Electron. Trans. Numer. Anal., 29 (2008), pp. 46–69], an algorithm is presented that attempts to construct the meta-stable states of a given Markov chain. We supplement the discussion contained therein concerning the two main results.

Key words. Markov chains; conformation dynamics; singular value decomposition

AMS subject classifications. 15A18, 15A51, 60J10, 60J20, 65F15

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