BRADLEY University

Laboratory Notebook

BEMOSS and Its Enhanced Applications

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Contents

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1 Notation

Throughout this document, the vectors (matrices) will be denoted by lowercase (uppercase) bold letters while the lowercase non-bold letters will denote scalar quantities. Sets will be denoted by calligraphic letters. For positive integers $m, n > 0$, $\mathbb{R}^n (\mathbb{R}^{m\times n})$ denotes n–dimensional column vector ($m \times n$–dimensional matrix) with entries taken from a set of real numbers $\mathbb{R}$. $(\cdot)^T$ denotes the transposition of quantity $(\cdot)$. The standard Euclidean norm of the vector $\mathbf{x} \in \mathbb{R}^n$ and the matrix $\mathbf{A}$ are given by $\|x\| = \left(\sum_{i=1}^n |x_i|^2\right)^{1/2}$ and $\|\mathbf{A}\| = \left(\sum_{i=1}^m \sum_{j=1}^n |a_{ij}|^2\right)^{1/2}$ with x_i, a_{ij} being the entries of $\mathbf{x}$ and $\mathbf{A}$, respectively. The scalar products of quantities $\mathbf{x}, \mathbf{y} \in \mathbb{R}^n$ and $\mathbf{A}, \mathbf{B} \in \mathbb{R}^{m\times n}$, are given by

$$\mathbf{x}^T\mathbf{y} = \sum_{i=1}^n x_i y_i \quad \text{and} \quad \mathbf{A} \cdot \mathbf{B} = \mathrm{Tr}\left(\mathbf{A}^T\mathbf{B}\right) = \mathrm{Tr}\left(\mathbf{A}\mathbf{B}^T\right),$$

respectively, where $\mathrm{Tr}(\cdot)$ is the trace of matrix $(\cdot)$. Clearly, $\mathrm{Tr}(\mathbf{A}^T\mathbf{A}) = \|\mathbf{A}\|^2$.
Example of citing a paper. "Authors in [**?**] ..."

Monday, May 06, 2019

I emailed Mr. Mattus asking him whether he made any progress on finding a laptop that can be used to demonstrate the installation of BEMOSS.