

Errata for Chapter 9

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- Eq. 9.8 should be

$$\|\Delta \mathbf{y}\| = \|\mathbf{A}\Delta \mathbf{x}\| \leq \|\mathbf{A}\| \|\Delta \mathbf{x}\|.$$

due to the Schwartz inequality (see Page 84).

- Eq. 9.9 should be

$$\mathbf{x} = \mathbf{A}^{-1}\mathbf{y} \quad \Rightarrow \quad \|\mathbf{x}\| = \|\mathbf{A}^{-1}\mathbf{y}\| \leq \|\mathbf{A}^{-1}\| \|\mathbf{y}\|$$

- Eq. 9.9 should be

$$\begin{aligned} \kappa_x(\mathbf{A}, \mathbf{x}) &= \sup_{\mathbf{x}, \Delta \mathbf{x}} \frac{\|\Delta \mathbf{y}\| / \|\mathbf{y}\|}{\|\Delta \mathbf{x}\| / \|\mathbf{x}\|} = \sup_{\mathbf{x}, \Delta \mathbf{x}} \frac{\|\mathbf{A}\| \|\Delta \mathbf{x}\| / \|\mathbf{y}\|}{\|\Delta \mathbf{x}\| / \|\mathbf{A}^{-1}\| \|\mathbf{y}\|} \\ &= \sup_{\mathbf{x}, \Delta \mathbf{x}} \|\mathbf{A}^{-1}\| \|\mathbf{A}\| = \|\mathbf{A}^{-1}\| \|\mathbf{A}\|. \end{aligned}$$