

Numerical Analysis,

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ERRATA LIST

Page 15, 6th line from *Notes*:

Text: A bias is added ...

Replace by: If $x \neq 0$: A bias is added ...

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Page 16, Line 6:

Text: $E_{stored} = 2^8 - 1 = 127$

Replace by: $E_{stored} = 2^7 - 1 = 127$

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Page 17, 3rd line from 1) Signed Zero:

Text: The stored exponent is 0, and the actual exponent is $E = 0 - 127 = -127$.

Replace by: The stored exponent is 0, and the actual exponent should be

$E = 0 - 127 = -127$. But, for $x = 0$, the exponent E and significant digits b_k are defined to be 0.

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Page 217

- Line 7, Third equation from (1):

Text: $x_3 = 12/9 - (2/9)x_1 + (1/9)x_2$

Replace: $+(1/9)$ by $-(1/9)$.

- Line 9, Matrix in equation (1'), third row:

Replace: $2/9$ by $-2/9$; and, $1/9$ by $-1/9$.

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Page 219, Line 1 (equation):

Text: $x_3^{(1)} = 12/9 - (2/9)x_1^{(1)} + (1/9)x_2^{(1)}$

Replace: $+(1/9)$ by $-(1/9)$.

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Page 236, Line 4:

Text: dimension of this linear subspace is equal to ...

Replace by: dimension of this linear subspace is less than or equal to ...

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Page 236, Line 5:

Text: there are r_i linear independent vectors ...

Replace by: there are $p_i \leq r_i$ linear independent vectors ...

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Page 240, Line 5 (*Note:* Inner product in V_n over \mathbf{C})

Text:

This is introduced by the same axioms 1- 4, replacing Axiom 3 by

3'. $\langle \lambda x, y \rangle = \bar{\lambda} \langle x, y \rangle$, for any scalar λ

The bar denotes the conjugate. Accordingly, relation (a) becomes now

$$\langle x, y \rangle = \sum_{i,j} \bar{\xi}_i \eta_j \langle e^i, e^j \rangle = \sum_i \sum_j a_{ij} \bar{\xi}_i \eta_j$$

In matrix form, relation (b) becomes

$$\langle x, y \rangle = \mathbf{x}^* \mathbf{A} \mathbf{y} \tag{b'}$$

Replace by:

This is introduced by the same axioms 1- 4, replacing Axiom 1 by

1'. $\langle x, y \rangle = \overline{\langle y, x \rangle}$

The bar denotes the conjugate. Note that (Exercise):

$$\langle x, \lambda y \rangle = \bar{\lambda} \langle x, y \rangle$$

Accordingly, relation (a) becomes now

$$\langle x, y \rangle = \sum_{i,j} \xi_i \bar{\eta}_j \langle e^i, e^j \rangle = \sum_{i,j} a_{ij} \xi_i \bar{\eta}_j \tag{a'}$$

In matrix form, relation (b) becomes

$$\langle x, y \rangle = \mathbf{x}^T \mathbf{A} \bar{\mathbf{y}} = \mathbf{y}^* \mathbf{A}^T \mathbf{x} \tag{b'}$$

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Page 272, Line 3 (Equation (3)):

Text: $(\mathbf{D} - \lambda \mathbf{I})\mathbf{x} = \mathbf{0}$

Replace by: $(\mathbf{D} - \frac{1}{\lambda} \mathbf{I})\mathbf{x} = \mathbf{0}$.

■

Page 273, Line 12 (equation):

Text: $\mathbf{x}^T \mathbf{R} \mathbf{x} = (\mathbf{S}^{-1} \mathbf{x})^T \mathbf{R} (\mathbf{S}^{-1} \mathbf{x}) = \mathbf{x}'^T \mathbf{R} \mathbf{x}' > 0$,

Replace by: $\mathbf{x}^T \mathbf{R} \mathbf{x} = (\mathbf{S}^{-1} \mathbf{x})^T \mathbf{K} (\mathbf{S}^{-1} \mathbf{x}) = \mathbf{x}'^T \mathbf{K} \mathbf{x}' > 0$.

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Note:

Minor spelling errors are not included in the above list.

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