Errata for *Nonlinear Inverse Problems in Imaging*

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Notation

B(Bullet), E(Example), L(Line), Lem(Lemma), N(Numbered equation), T(Theorem)

Page	**Location**	**Correction**	**Description**
19	L5	$\int_{t_0}^{t+1} \|\mathbf{r}'(t)\| dt$	right norm sign missing
49	T3.2.2	$\left[\frac{\partial}{\partial t} - k\frac{\partial^2}{\partial x^2}\right] v_\epsilon = -2k\epsilon < 0$	opposite inequality
57	E3.4.1	$\rho = -1$	To be consistent, ρ should be -1
60	T3.4.5	$\hat{u}(r,\theta) = u(\mathbf{r_0} + r_0\,(r\cos\theta, r\sin\theta))$	typo
65	T3.4.12	$u(\mathbf{r}) = \int_\Omega G(\mathbf{r},\mathbf{r}')\rho(\mathbf{r}')d\mathbf{r}' \quad (\forall \mathbf{r} \in \Omega)$	typo
67	E3.4.18	$\|\nabla u \cdot \nabla\phi\| \le \frac{1}{2}\|\nabla u\|^2 + \frac{1}{2}\|\nabla\phi\|^2$	typo

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Page	**Location**	**Correction**	**Description**
79	B3	$\|\alpha\| = \sum_{k=1}^{n} \alpha_k$	typo
79	B6	and $H_0^2(\Omega) = W_0^{2,2}(\Omega)$	upper-case
80	L3	$\left\|\int_0^s u_m''(t)dt\right\|$	lower-case
82	L6	*Integrating over the* $\mathbf{x}$ *variable gives*	variable
83	N4.22		(need to remove gradient?)
83	N4.23		(need to remove gradient?)
84	Lem4.2.10	$\frac{1}{\|E\|}\int_E \left[\int_0^{\|x-y\|} -\frac{d}{dt}u(\mathbf{x}+t\theta_{\mathbf{y}})\right] dy$	minus sign needed
89	L7	$\int_\Omega \sigma\nabla u \cdot \nabla\phi = \int_\Omega f\phi dx$	typo in variational form
89	N4.35	$\int_\Omega \sigma\nabla u \cdot \nabla\phi$	dot product missing
89	Matrix	$\begin{pmatrix} a(\phi_1,\phi_1) & a(\phi_2,\phi_1) & \cdots \\ a(\phi_1,\phi_2) & a(\phi_2,\phi_2) & \cdots \\ a(\phi_1,\phi_3) & a(\phi_2,\phi_3) & \cdots \\ \vdots & \vdots & \ddots \end{pmatrix}$	no symmetry of the bilinear form
90	L1	coefficients $a_{kj} = a(\phi_j,\phi_k)$	revision in accordance with the above
90	E4.3.2	$< A\mathbf{x},\mathbf{y} >:= \sum_{j=1}^{n}\sum_{i=1}^{n} a_{ij}x_iy_j$	summation index
94	T4.3.8	$(ii)\|u-u_n\| \le \left(\frac{M}{c}\right)\min_{v\in X_n}\|u-v\|$	typo
98	E4.3.13	$= \frac{d}{dt}\int_a^b \sqrt{1+(u'+tv')^2}dx\Big\|_{t=0}$ $= \int_a^b \frac{2u'v'+2tv'}{2\sqrt{1+(u'+tv')^2}}dx\Big\|_{t=0}$ $= \int_a^b \frac{2u'v'}{2\sqrt{1+(u')^2}}dx$ $= \int_a^b \frac{d}{dx}\left[\frac{u'}{\sqrt{1+(u')^2}}\right]vdx$ $= \int_a^b \frac{u''(\sqrt{1+(u')^2})-u'}{1+(u')^2}vdx$	typo in coefficient