Errata: Lie Group Analysis of a Nonlinear Coupled System of Korteweg-de Vries Equations

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1 Errata by author

1. Abstract page i, *NPLPDEs* in line 4 should be *NLPDEs*.
2. Page 2 *Definition 2.1.2* (i) should be
   (i) (Closure) Given $T_{\epsilon_1}, T_{\epsilon_2} \in \mathcal{G}$, for $\epsilon_1, \epsilon_2 \in \mathcal{N}' \subset \mathcal{N}$, then $T_{\epsilon_1} T_{\epsilon_2} = T_{\epsilon_3} \in \mathcal{G},\ \epsilon_3 = \phi(\epsilon_1, \epsilon_2) \in \mathcal{N}$.
3. Page 4 *The first equation in Remark 2.1.13* should be
$$X^{[1]} = X + \zeta_i^{\alpha} \frac{\partial}{\partial u_i^{\alpha}}. \tag{1}$$
4. Page 11 *The label (3.2.40)* should not be there.
5. Page 12 *Equation (3.2.42)* should be
$$\frac{\mathrm{d}\bar{t}}{\mathrm{d}\epsilon_1} = 0, \quad \bar{t}\Big|_{\epsilon_1=0} = t,\ \frac{\mathrm{d}\bar{x}}{\mathrm{d}\epsilon_1} = 1,\ \bar{x}\Big|_{\epsilon_1=0} = x,\ \frac{\mathrm{d}\bar{u}}{\mathrm{d}\epsilon_1} = 0,\ \bar{u}\Big|_{\epsilon_1=0} = u. \tag{2}$$
6. Page 13 *The statement after equation (3.2.52)* should read *For some real roots r_1, r_2, r_3, of the cubic polynomial on the right-hand side of (3.2.50), the solutions (3.2.51) could be rewritten in the following forms: ibragimov1995crc*
7. Page 13 *In equation (3.2.57)* the constant $\mathcal{C} = -6\delta$.
8. Page 14 *The last paragraph on travelling waves* should read *By the change of variable $\varphi = (c/2)\,\mathrm{sech}^2(\eta)$ and integration of (3.2.62), we get the one-soliton solution*
$$u(x,t) = \frac{c}{2}\,\mathrm{sech}^2\left(\frac{\sqrt{c}}{2}(x - ct)\right). \tag{3}$$
9. Page 16 *Equation (3.3.22)* should be
$$u_t + 6uu_x = T_t^t + u_t T_u^t + u_{tx} T_{u_x}^t + A_x + u_x A_u + u_{xx} A_{u_x}. \tag{4}$$
10. Page 19 *The label (4.2.14)* should not be there.

11. Page 19 *Equation (4.2.15)* should be

$$\begin{aligned} \frac{\mathrm{d}\bar{t}}{\mathrm{d}\epsilon_i} &= \xi^t(\bar{t},\bar{x},\bar{u},\bar{v}), \quad \bar{t}\Big|_{\epsilon_i=0} = t, \quad \frac{\mathrm{d}\bar{x}}{\mathrm{d}\epsilon_i} = \xi^x(\bar{t},\bar{x},\bar{u},\bar{v}), \quad \bar{x}\Big|_{\epsilon_i=0} = x, \\ \frac{\mathrm{d}\bar{u}}{\mathrm{d}\epsilon_i} &= \eta^u(\bar{t},\bar{x},\bar{u},\bar{v}), \quad \bar{u}\Big|_{\epsilon_i=0} = u, \quad \frac{\mathrm{d}\bar{v}}{\mathrm{d}\epsilon_i} = \eta^v(\bar{t},\bar{x},\bar{u},\bar{v}), \quad \bar{v}\Big|_{\epsilon_i=0} = v. \end{aligned} \tag{5}$$

12. Page 20 The transformations in the Lie groups given by (4.2.16)-(4.2.18) have *extra commas*. There should be no extra comma immediately before $\bar{u}$.

13. Page 26 *Case (ii)*, there should be a **space** between **by** and $W_2^1 = u_t$ in the first line.

2 Errata requested by examiners

Examiners may request corrections here.