

## Errata for “Partial Differential Equations”, AMS Press

### First Printing

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I have marked in **boldface** the most important changes.

I have repaired all these errors for the second printing, due out in early Fall, 1999. I will maintain a listing of errors which have made it into the new printing in a separate file.

Last modified: Sept 6, 1999.

### CHAPTER 2

page 18, line 5: Add a superscript  $n$  to the second  $\mathbb{R}$ .

page 37, line -11: Remove one minus sign from the last term.

page 65, line -4: Change “ $\Delta$ ” to “ $\Delta u$ ”.

page 77, lines 4, -1,-2,-6,-7: Change all “ $\frac{d}{dt}$ ” to “ $\frac{\partial}{\partial t}$ ”.

### CHAPTER 3

page 95, line 8: The summation should be for  $j = 1$  to  $m$ , not  $n$ .

page 96, lines -2,-8: To make the notation consistent, write  $v'$  instead of  $u'$ .

page 99, line -4: Add a dot over the first  $\mathbf{x}(s)$ .

page 102, line -13: Add a comma.

page 104, line 12: Add commas.

page 107, line -1: Write  $s \in I$ , not  $s \in \mathbb{R}$ .

page 109, line -7: Write  $s \in I$ .

page 116, line -4: **Add a dot over the first  $\mathbf{w}(s)$ .**

page 121, line 15: Change “ $\lim_{q \rightarrow \infty}$ ” to “ $\lim_{|q| \rightarrow \infty}$ ”.

page 134, line -7: Change “ $t_0 > 0$ ” to “ $t > 0$ ”.

page 134, line -4: Change “ $0 < \epsilon < r < t$ ” to “ $0 < \epsilon < r < t_0$ ”.

page 141: The regions “ $u = 1$ ” and “ $u = 0$ ” are wrongly interchanged in the picture.

page 144, line 7: Change “ $s(t) = \frac{s(t)}{2t}$ ” to “ $\dot{s}(t) = \frac{s(t)}{2t}$ ”.

page 146, line 10: Change  $\mathbb{R}^n$  to  $\mathbb{R}$ .

page 149, line 3: Change “ $\int_{-\infty}^{\infty} w_x dx$ ” to “ $\int_{-\infty}^{\infty} w_x v dx$ ”.

page 150, line -6: Change  $\mathbb{R}^n$  to  $\mathbb{R}$ .

#### CHAPTER 4

page 185, line -1: Change last “x” to “y”

page 186, line 3: Change “dz” to “dx”.

page 195, line 16: Change to “ $\mathbb{R} \times \{t = 0\}$ ”.

page 204, line 3: Change “ $\Delta u^\epsilon$ ” to “ $\Delta v^\epsilon$ ”.

page 204, line -10: Change “(18), (19)” to “(17), (19)”

page 234, line -2: Change “(18), (19)” to “(17), (19)”

#### CHAPTER 5

page 257, line 3: **Rewrite the sentence**, to begin “Suppose now  $1 \leq p < \infty, \dots$ ”

page 257, line 9: **Add the following step** “8. Suppose next  $p = \infty$ . In this case we carry out the above extension for any finite  $p$ . According to the proof of Theorem 3 in §5.3.3, we can select the functions  $u_m$  so that  $\|u_m\|_{W^{1,\infty}} \leq C\|u\|_{W^{1,\infty}}$ . Hence  $\{Eu_m\}_{m=1}^\infty$  is bounded in  $W^{1,\infty}$ , and so  $Eu \in W^{1,\infty}$ , with the required estimate.”

page 271: Add this remark at the end of the proof of Theorem 6: “Notice that once we have shown the weak derivatives  $D^\alpha u$  to be continuous for all  $|\alpha| \leq k$ , then in fact  $u \in C^k$ . The proof, using mollifiers, is left to the reader.”

#### CHAPTER 6

page 306, line -14. Change 2 to 3.

page 318, line 10: Change  $e_i$  to  $e_k$ .

page 320, line 13: Change  $U(x^0, r)$  to  $B(x^0, r)$ .

page 340, line -5: **The inequality should be reversed.**

#### CHAPTER 7

page 419, line 1: Change “Theorem 3,(iii)” to “Theorem 3,(ii)”.

#### CHAPTER 8

page 438, line 11: Change the matrix entry to “ $w_{x_n}^1$ ”.

page 487, line 5: Change all “ $\lambda(j + 1)$ ” to “ $j + \lambda$ ”.

page 487, line -8: Change “ $C^1$ ” to “ $C^2$ ”.

page 476, line 14: Interchange  $x$  and 0.

page 480, line 8: The last part should be “ $\leq \|I'[\eta_t(u)]\|^2 \leq -\sigma^2$ ”.

page 480, line 12: Change  $\eta_t$  to  $\eta_1$ .

page 481, line -6:  $\delta$  should be  $\epsilon$ .

page 483, line 13: Change “ $V$ ” to “ $U$ ”.

page 484, line 7: Replace the first “ $w$ ” by “ $w - u$ ”.

## CHAPTER 9

page 518, line -8: Change to “ $y = \mu x \notin U_\lambda$ ”.

page 519, line 16: Change “ $x_0$ ” to “ $x^0$ ”.

page 531, line -7: Change “ $A^0 u$ ” to “ $A^0[u]$ ”.

## CHAPTER 10

## CHAPTER 11

page 580, line 4: Change “ $\dot{\mathbf{v}}(w)$ ” to “ $\dot{\mathbf{v}}(w)w_t$ ”.

## APPENDICES

page 618, line 2: Change “ $C^k(U)$ ” to “ $C(U)$ ”.

page 623, line 3: Change the first  $\frac{1}{q}$  to  $\frac{1}{p}$ .

page 641, line 6: “ $KK^*x$ ” should be “ $KK^*u$ ”

page 641, line -1: Omit the phrase “to (4)”

page 648, line 7: Omit “, $f$ ”

My thanks to W. Chang, H. Charlton, R. Choksi, J. Colliander, I. Fatkullin, H. Hanche-Olsen, D. Horstmann, D. Jerison, R. Jerrard, N. Jung, H. Kai, B. Kellogg, D. Kondrashov, C. Larsen, R. Laugesen, T. Pence, M. Pinsky, S. Shepherd, and T. Toth for finding these typos and errors.

Please let me know about any others you find, at [evans@math.berkeley.edu](mailto:evans@math.berkeley.edu).