Update Log (as of November 24, 2008)

Here is a current list of corrections to *Applied Asymptotic Analysis*, Graduate Studies in Mathematics, Vol. 75, AMS Publications, Providence, 2006.

1. Chapter 6, Section 6.3.2 (Existence of true solutions described by the formal asymptotic series. The Stokes phenomenon), pages 233–237. Some corrections are in order here related to the hypotheses required for the Contraction Mapping Principle to apply. I suggest the following concrete modifications. On page 233:

   (a) In the statement of Theorem 6.2, replace "bounded" with "closed" on line 2 and replace the parenthetical remark with "(*e.g.* $X = B$ or, for some $g \in B$ and $M \geq 0$, $X = \{f \in B \text{ such that } \|f - g\| \leq M\}$)".

   (b) In the final paragraph on this page, replace "bounded" with "closed" on line 3 and "open" with "closed" on line 4. On line 4 the given open interval should be written as a closed interval. Finally on line 6 the two inequalities should be written with $\leq$ rather than with $<$.

   On page 234 the five inequalities written with $<$ on lines 2, 5, and 7 (one on line 7, the second displayed equation on this page, occurring in a subscript) shold all be written instead with $\leq$. Finally, on page 237, in the seventh line from the bottom of the page, "bounded subset" should be replaced by "closed subset".

2. Chapter 6, Section 6.3.3 (Another approach to the existence of true solutions and the Stokes phenomenon. Borel summation), page 248. In the last paragraph the convergence condition $|t| < 80/121$ should read instead $|t| < 320/621$.

3. Chapter 10, Section 10.3.2 (Derivation of the Korteweg-de Vries equation), pages 446–447. A term has been omitted from equation (10.89). Equation (10.89) should instead read as

$$\frac{\partial N}{\partial T} + G + \frac{\epsilon}{2}\left[\left(\frac{\partial N}{\partial X}\right)^2 - \frac{\partial^3 N}{\partial X^2 \partial T}\right] = O(\epsilon^2)$$

   Making this correction, one finds that the first term on the left-hand side of each of equations (10.90) and (10.91) should be doubled. Thus, the final two equations in this section should read, respectively,

$$2\frac{\partial^2 N}{\partial \xi \partial \tau} + \frac{1}{3}\frac{\partial^4 N}{\partial \xi^4} + 3\frac{\partial N}{\partial \xi}\frac{\partial^2 N}{\partial \xi^2} = O(\epsilon^2)$$

   and

$$\frac{\partial F}{\partial \tau} + \frac{3}{2}F\frac{\partial F}{\partial \xi} + \frac{1}{6}\frac{\partial^3 F}{\partial \xi^3} = 0.$$

   Of course the factor of $3/2$ could easily be absorbed by simply rescaling F.