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*Erratum*

*Global Solutions for an Extended Class  
of Hyperbolic Systems of Conservation Laws*

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In [1] there is an error occurring on p. 175. Namely, the proof of equation (2.19) is incorrect and this equation should accordingly be deleted. Thus, the shock curve is not necessarily convex, but is merely “starlike” with respect to the starting point  $P_0$ , in the sense that every ray starting at  $P_0$  meets the curve in at most one point. This follows from (2.18). The theorems in the paper remain unaffected by this change. We would like to point out that this change should also be made in the papers [2]–[6]. (In [5], one can show that the shock curve is convex, by direct computation.) None of the results in any of these papers is affected by this change, although, of course, the diagrams look a bit different.

We would also like to take this opportunity to point out some other minor errors and misprints.

In the paper [1]:

- p. 185, line 5, after  $\lambda_i(u)$  insert “normalized by  $d\lambda_i r_i > 0$ ”;
- p. 186, line 19, change (1) to (2);
- p. 187, line 11, change  $\gamma_k \delta_k$  to  $\gamma_k \delta_k^2$ .

In the paper [3]:

- p. 113, line 6, change  $\lambda_2$  to  $\lambda_1$  in both places;
- p. 114, line 6, delete the phrase “and we shall first consider the case where  $u_2 \neq u_1$ ”, and replace the rest of the proof of the lemma by the following: “By Lemma 3,  $U_1$  and  $U_2$  lie on  $v = s'_2(u; \bar{U})$  which is impossible since it implies that this curve has a zero or infinite derivative. This completes the proof of the lemma.”

**References**

1. JOHNSON, J. L., & J. A. SMOLLER, Global solutions for an extended class of hyperbolic systems of conservation laws. Arch. Rational Mech. Anal. **32**, 169–189 (1969).
2. JOHNSON, J. L., & J. A. SMOLLER, Global solutions of hyperbolic systems of conservation laws in two dependent variables. Bull. A.M.S. **74**, 915–918 (1968).
3. SMOLLER, J. A., A uniqueness theorem for Riemann problems. Arch. Rational Mech. Anal. **33**, 110–115 (1969).

4. SMOLLER, J.A., On the solution of the Riemann problem with general step data for an extended class of hyperbolic systems. *Mich. Math. J.* **16**, 201—210 (1969).
5. JOHNSON, J.L., & J.A. SMOLLER, Global solutions for certain systems of quasi-linear hyperbolic equations. *J. Math. Mech.* **17**, 561—576 (1967).
6. SMOLLER, J.A., A survey of hyperbolic systems of conservation laws in two dependent variables. *Proceedings of the Battelle Rencontres, 1968*, 51—60.

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