

Erratum: Contributions to Stability Theory

Author(s): J. L. Massera

Source: *Annals of Mathematics*, Vol. 68, No. 1 (Jul., 1958), p. 202

Published by: Mathematics Department, Princeton University

Stable URL: <https://www.jstor.org/stable/1970049>

Accessed: 22-12-2024 22:52 UTC

---

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



*Mathematics Department, Princeton University* is collaborating with JSTOR to digitize, preserve and extend access to *Annals of Mathematics*

## ERRATUM

## Contributions to Stability Theory

BY J. L. MASSERA

These Annals, Vol. 60 (1956), 182-206

(Received January 13, 1958)

W. Hahn pointed out to the author that the proof of Theorem 29 is incorrect. As a matter of fact, the theorem itself is false as the following example shows.

Let  $x$  be a real variable and  $f(x)$  a function which vanishes at the points of a sequence  $\{x_n\}$  of positive numbers which tend to zero monotonically; assume moreover that  $xf(x) < 0$  for  $x \neq 0$ ,  $x \neq x_n$ . The solution  $x=0$ , of  $\dot{x} = f(x)$  is not asymptotically stable because of the existence of the solutions  $x=x_n$  arbitrarily near  $x=0$ . However, it is totally stable. Indeed, given  $\varepsilon > 0$  choose  $n$  so that  $x_n < \varepsilon$  and let  $\delta \leq x_{n+1}$  be so small that  $|f(x)|$  takes on values  $> \delta$  in both intervals  $(x_{n+1}, x_n)$  and  $(-x_n, -x_{n+1})$ . Then, if the function  $|g(x, t)|$  satisfies  $|g(x, t)| < \delta$  we have  $x \cdot (f(x) + g(x, t)) > 0$  at certain points of both intervals and any solution  $x(t)$  of  $\dot{x} = f(x) + g(x, t)$  such that  $|x(t_0)| < \delta$  cannot leave for  $t \geq t_0$  the interval  $|x| \leq x_n < \varepsilon$ .

INSTITUTO DE MATEMÁTICA Y ESTADÍSTICA  
MONTEVIDEO, URUGUAY

## ERRATUM

## An Example of a Smooth Linear Partial Differential

## Equation without Solution

BY HANS LEWY

These Annals, Vol. 66 (1957), 155-158

(Received January 30, 1958)

Mr. L. Bers kindly pointed out an error of sign occurring on p. 157 of the paper. It is eliminated by replacing throughout

$$y_1 + 2q_j x_1 - 2p_j x_2 \quad \text{by} \quad y_1 - 2q_j x_1 + 2p_j x_2$$

and

$$Y_1 - 2q_j X_1 + 2p_j X_2 \quad \text{by} \quad Y_1 + 2q_j X_1 - 2p_j X_2$$

UNIVERSITY OF CALIFORNIA