## **CORRIGENDUM**

## MARGARITA OTERO

In the corollary on page 783 of [1] there is a missing 2 in line -9. The statement of the corollary, as it stands, is not correct.

It should say the following.

Under the conditions of Lemma 3, if M is a normal Z-ring then  $M[x_1, x_2, x_3, x_4]$  is also normal.

Note. This is a harmless requirement, since the aim of this corollary is to get the remark on page 785. Namely, every normal model of 10 can be extended to a normal model of 10 satisfying Lagrange's theorem.

This remains true because when we build up a normal model of IO + Lagrange's theorem extending a normal model of IO we can always get a **Z**-ring at even stages, say, of the construction (see the proof of Lemma 1).

Also, the remark on page 785 is true because the **Z**-ring containing  $M[x_1, x_2, x_3, x_4]$  is normal.

A correct proof of the corollary, under the assumption that M is a  $\mathbb{Z}$ -ring, is as follows.

Follow the published proof to get  $2a_1(x)$  and  $2a_2(x)$  in M'[x]. Then we have

$$u = \frac{s_1(x, w, z)}{2} + \frac{s_2(x, w, z)}{2} \sqrt{f} \in B'$$

with  $s_i(x, w, z) = 2a_i(x, w, z) \in M[x, w, z]$  for i = 1, 2.

We must prove that

(1) 
$$\frac{s_i(x, w, z)}{2} \in M[x, w, z] \quad \text{for } i = 1, 2.$$

Suppose this is not the case. Then, using the same reasoning as in the published proof, we get that neither of them is in M[x, w, z]. Since M is a  $\mathbb{Z}$ -ring, we can express them as follows:

$$s_i(x, w, z) = \sum_{(k) \in I_i} x^{k_1} w^{k_2} z^{k_3} + 2h_i(x, w, z)$$

with  $I_i \neq \emptyset$  for i = 1, 2. Since  $uv \in M[x, w, z]$ ,

$$s_1^2(x,w,z) - s_2^2(x,w,z) f \in 4M[x,w,z].$$

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©1991, Association for Symbolic Logic 0022-4812/91/5603-0005/\$01.20 Then  $r(x, w, z) \in 4M[x, w, z]$ , with

$$r(x, w, z) = \left(\sum_{(k) \in I_1} x^{k_1} w^{k_2} z^{k_3}\right)^2 + \left(\sum_{(k) \in I_2} x^{k_1} w^{k_2} z^{k_3}\right)^2 (x^2 + w^2 + z^2 - a).$$

Let  $x^m w^n z^l$  be the greatest term in  $I_2$  for the lexicographic order. Then the greatest term in r(x, w, z) is either  $2x^{2m+2}w^{2n}z^{2l}$  or  $x^{2m+2}w^{2n}z^{2l}$ , depending on whether  $(m+1, n, l) \in I_1$  or not. In both cases this largest term is not in 4M[x, w, z]. This contradiction proves (1).

## REFERENCE

[1] M. Otero, On Diophantine equations solvable in models of open induction, this Journal, vol. 55 (1990), pp. 779-786.

MATHEMATICAL INSTITUTE
OXFORD OX! 3LB, ENGLAND