CORRECTION TO "SINGULARITIES OF A SIMPLE ELLIPTIC OPERATOR"

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B. Ruf of the Università di Milano has pointed out that the evaluation $ZI_{n+1}=1$ on p. 161, line 25 is wrong. The proof that each of the loci L_n $(n=1,2,3,\cdots)$ is nonvoid and connected then falls apart, though it is easy to check it by other methods for n=1,2, and 3. This failure means that the map $f \to -f'' + f^2/2$ may have the predicted singularities with normal form

$$x \to (x_1 x_2 = x_1^2 x_3 \cdots + x_1^{n-1} x_n + x_1^{n+1}, x_2, x_3, \cdots)$$

(fold, cusp, swallow-tail, etc.) only up to a certain degree $n \ge 3$ —and then stop, whereas my claim had been that they are presented in every degree without exception. I do not see how to repair this blunder except in very low degree, by trial and error.

References

[1] H. P. McKean, Singularities of a simple elliptic operator, J. Differential Geometry 25 (1987) 157-165.

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