Review of: "New Perspectives on the Roots of Real Polynomials of Degree n and Number Theory"

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Potential competing interests: No potential competing interests to declare.

The manuscript "New perspectives on the roots of real polynomials of degree n and number theory" describes results on the roots of complex polynomials and on Diophantine equations.
This paper does not require any major comments. I will address the most important issues.
This work as a whole is nontrivial and has clear, although difficult, calculations, which constitute the ambition of the work and the high level of the results.

Section 3 is devoted to considerations about the roots of the polynomial. In particular, using the property $A+B=\lambda_j[A^2+B^2]$ for some polynomials A, B and for some λ_j.

Section 4 discusses the application of a similar property to solving Diophantine equations of the form $Ax+By+Cz=D$. Although the method is admirable, it is so complicated that I doubt that people will be willing to use it. But I certainly do not deny the method, and it is correct.

Similarly, in section 5, we have an alternative proof of Fermat's Last Theorem using the mentioned property.

However, I have some editorial comments on the manuscript.

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\begin{itemize}      \item[1. ] Section 1 Introduction: 6th line from the end. Instead of the lambda symbol, we have the word "lambda".      \item[2. ] Theorem 3.1. The formulation includes the fragment "$a_0<0$ y $a_1>0$". It seems
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After these minor corrections, I consider the manuscript acceptable for publication.