On the area of the immediate basins of attraction for Newton's method applied to real polynomials

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Abstract

It is known that if we apply Newton's method to the complex function $F(z) = P(z)e^{Q(z)}$, with $\deg(Q) > 2$, then the immediate basin of attraction of the roots of P has finite area. In this paper we show that under certain conditions on P, if $\deg(Q) = 1$, then there is at least one immediate basin of attraction having infinite area.

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