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Quantitative estimates for the distribution of zeros of rational functions

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We investigate the distribution of zeros of a rational function R in a region D in $\overline{\mathbb{C}}$, which may be multiply connected. Let Γ be a boundary component of D which is a Jordan arc or a Jordan curve of class C^{2+} . Then we prove a result of discrepancy-type for the distribution of zeros of R in the neighborhood of Γ in terms of

- (i) the maximum norm $||R||_{\partial D}$, on the boundary of D,
- (ii) the location of the poles of R in D,
- (iii) the behavior of R inside Γ .

The results extend well-known Erdős-Turán discrepancy estimates for the zeros of polynomials and the weak*-convergence of the zero counting measure, due to Edrei, Papamichael, Pritsker and Saff.