Computation of the complex zeros of the parabolic cylinder function $U(a, w)$

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We provide a Matlab algorithm to compute the complex zeros of the parabolic cylinder function $U(a, w)$. Through the combination of a fourth order root finding method described in [1] and the numerical methods studied in [2] together with a Liouville-Green expansion from [3] to evaluate the parabolic cylinder function, we find the roots of the function for a large region of its parameters.

References

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