

## Gauss-Lucas theorem in polynomial dynamics

Margaret Stawiska Friedland

*American Mathematical Society/MathSciNet*

stawiska@umich.edu

Using versions of the Gauss-Lucas theorem adapted to dynamics, we prove that for every complex polynomial  $p$  of degree  $d \geq 2$  the convex hull  $H_p$  of the Julia set  $J_p$  of  $p$  satisfies  $p^{-1}(H_p) \subset H_p$ . This settles positively a conjecture by P. Alexandersson. We also characterize the families of polynomials for which the equality  $p^{-1}(H_p) = H_p$  is achieved.