

Dynamical aspects of Schröder's method

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Abstract

The Schröder's method was introduced in [1]. The dynamics of the method applied to quadratic polynomials was studied in depth by Galilea and Gutiérrez in [2]. The aim of this work is to review the dynamic properties of the method from different points of view.

- A brief introduction to the Method, reviewing [1] and [2].
- Extraneous fixed points and cycles for Schröder's method
- A Study of the basin of attraction of the infinity and its relation with the Julia set.
- Some cases in which Julia set is connected.

References

- [1] E. Schröder, Über unendliche viele Algorithmen zur Auflösung der Gleichungen, *Mathematische Annalen*, 2 (1870), 317–365.
- [2] V. Galilea; J. M. Gutiérrez, A Characterization of the Dynamics of Schröder's Method for Polynomials with Two Roots. *Fractal Fract.* 2021, 5, 25. <https://doi.org/10.3390/fractalfract5010025>
- [3] Alan F. Beardon, *Iteration of rational functions*. New York [etc. : Springer, 1991

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