## On univalent trinomials

## Dmytro Dmytryshyn

 (Odessa National Polytechnic University)E-mail: dmitrishin@op.edu.ua
Daniel Gray
(Georgia Southern University)
E-mail: dagray@georgiasouthern.edu
Oleksandr Stokolos
(Georgia Southern University)
E-mail: astokolos@georgiasouthern.edu
The Suffridge polynomials were introduced by T. Suffridge [1] and play an important role in complex analysis. Suffridge polynomials are closely related to the Brandt polynomials, first mentioned in M. Brandt's Ph.D. thesis [2] and rediscovered in [3].

The $T$-folded version of these polynomials were suggested in [4, 5] and several important conjectures about them were made.

In this talk we will outline the proof of these conjectures in the particular case of trinomials

$$
z+a z^{1+T}+b z^{1+2 T}
$$

A beautiful geometry behind the scenes will be illuminated.

## References

[1] T.J. Suffridge, On univalent polynomials, J. London Math. Soc. 44, 496-504, 1969.
[2] M. Brandt, Variationsmethoden für in der Einheitskreisscheibe schlichte Polynome, Th邓esis, Humboldt-Univ. Berlin, 1987.
[3] D. Dmitrishin, A. Smorodin, and A. Stokolos, An extremal problem for polynomials, Applied and Computational Harmonic Analysis, 56: 283-305, 2022.
[4] D. Dmitrishin, D. Gray, and A. Stokolos, Some extremal problems for trinomials with fold symmetry, 12(4), Analysis and Mathematical Physics, 2022.
[5] D. Dmitrishin, D. Gray, and A. Stokolos, On the Koebe quarter theorem for trionomials with fold symmetry, Proceedings of the $A M S$ (to appear).

