Some multi-variate conjectures involving the zeros of polynomials and analytic functions

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Abstract

We discuss two families of conjectures, one involving zeros of polynomials linked to matchings in graphs and the other involving zeros of certain approximants to the Riemann Xi function. The first is an extension of a conjecture of K. Ono, D. Wagner and the speaker dating back to 1996, and is joint work with M. Visontai. The second is a new conjecture of the speaker based solely on calculations in Maple, and views the Riemann Hypothesis and related statements as limiting cases of a general phenomena involving the zeros of certain special functions.