

SEMINARIO DE FÍSICA Y MATEMÁTICAS

Root Separation Bound

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ABSTRACT:

Let f be a square-free polynomial. The root separation of f is the minimum of the pair-wise distance between the complex roots of f . Finding a lower bound on the root separation is a fundamental problem, arising in numerous disciplines. Due to its importance, there has been extensive research on this problem, resulting in various bounds. In this talk, we present another bound, which is “nicer” than the previous bounds in that

- (1) It is bigger (hence better) than the previous bounds.
- (2) It is covariant under the scaling of the roots, unlike the previous bounds.

If time allows, we will also describe a generalization to multivariate polynomials systems.