PhD research topic proposal

BME, Doctoral School of Mathematics and Computer Science

Name of supervisor :

András Kroó

Degree:

Doctor of the Academy (DSc)

Title of the topic:

Optimal polynomial meshes, discretization of the uniform and integral norms of multivariate polynomials

Short description:

Optimal polynomial meshes are discrete point sets in the given compact set which allow to estimate uniform norm of polynomials on the compact set by a constant multiple of the discrete sup norm of the polynomials. The cardinality of these meshes must be asymptotically optimal. Analogous problem with respect to the Lp norms of the polynomials is related to the so called Marcinkiewicz-Zygmund type inequalities for multivariate polynomials on various compact domains. These inequalities provide a basic tool for the discretization of the Lp norm and are widely used in the study of the convergence properties of Fourier series, interpolation processes and orthogonal expansions.

Requirements:

Contact:

Phone:

E-mail:

Place of work: