UNIVERSITÀ DELLA CALABRIA | DIPARTIMENTO DI **MATEMATICA E INFORMATICA**

Ph.D. in Mathematics and Computer Science

Academic year 2023/2024

INTERPOLATION, APPROXIMATION AND THEIR APPLICATIONS; MULTINODE SHEPARD METHODS: THEORY, IMPLEMENTATION AND APPLICATION

Francesco Dell'Accio - Filomena Di Tommaso - University of Calabria

The goal of the course is to give an introduction on the multimode Shepard methods for scattered data interpolation and on their applications to the numerical solutions of PDEs by collocation. The definition of such interpolants require the solution of two main problems: the partitioning of the node set in ordered subsets that guarantees the existence and accuracy of approximation of local interpolation polynomials of fixed total degreee and the possibility to compute them in a stable way. There is evidence that such interpolants are useful in the numerical solution of elliptic PDEs via collocation, due to their explicit representation in terms of the function values which reflects in a low condition number of the collocation matrix.

THU 04/07 MON 08/07
FRI 05/07 TUE 09/07

CUBO 30 A - 1 ST FLOOR

16:00 - 19:00