RBF-Partition of Unity Method: an overview of recent results

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The Partition of Unity Method (PUM), performed with local Radial Basis Function (RBF) approximants, has been proved to be an effective tool for solving large scattered data interpolation problems and it is nowadays a popular technique for solving partial differential equations.
In this talk recent results about efficiency, accuracy, stability and positivity of the method, will be presented. Moreover, a new technique for track data interpolation using variable shapes for the subdomains in RBF-PUM, specifically ellipses, will be proposed.