

Optimal selection of shape parameters in radial kernels

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Abstract

The problem of selecting an optimal shape parameter in radial kernels has been a relevant problem for many years. The predictive capacity of radial basis functions (RBFs) methods greatly depends on this parameter both in the PDE approximation using RBF collocation methods and in the interpolation setting (see [3, 4]). This is also important for Machine Learning applications by kernel methods. In this talk some recent results will be discussed for interpolation and integration [1, 2]. Several experiments and some open problems will be presented.

Keywords: radial basis functions, meshfree approximation, radial kernel methods, approximation algorithms

References

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