Interpolation with radial basis functions and parameters

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Abstract

When using interpolation methods in many dimensions and with scattered data, the method of radial basis functions is highly useful and very popular. In principle, this method works in arbitrary dimensions, and especially useful radial basis functions are multiquadrics, inverse multiquadrics, Gaussians and Poisson kernels for example. Those radial basis functions contain free parameters (other than the interpolation coefficients) which have to be chosen suitably. We discuss some choices and consequences and some limiting cases.

References

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