Green's function splines and applications

R.K. Beatson University of Canterbury Christchurch, New Zealand rick.beatson@canterbury.ac.nz

In this paper we consider kernel-based methods employing linear combinations of Green's functions, or derivatives of Green's functions, placed at various centres. First we study minimum norm Lagrange and Hermite interpolation problems on bounded domains where the solution is given by a combination of Green's functions, or derivatives of Green's functions. Later the domains of the Green's functions are specialised to balls and a modified partition of unity approach is employed to allow application to problems involving large numbers of interpolation conditions on domain \mathbb{R}^d . Numerical aspects are considered and examples are given demonstrating the utility of the approach.

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References

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