SOLVING FREDHOLM INTEGRAL EQUATIONS OF THE SECOND KIND BY SPLINE QUASI-INTERPOLATION

Farida El Mokhtari

University of Granada, Spain, & University Mohammed First, Oujda, Morocco

Abstract

For solving the Fredholm integral equation of the second kind, we approximate the kernel by two types of bivariate spline quasi-interpolants, namely the tensor product and the continuous blending sum of univariate spline quasi-interpolants. These methods belonging to the class of degenerate kernel methods, we compare them with other classical methods of the same type, we study their approximation errors and we illustrate the theoretical results by numerical examples. Joint work with D. Barrera and D. Sbibih.