

A discussion on the regularizing parameter of some integral equations

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In [1] the author proposed a regularizing technique, depending on a parameter $q \in \mathbb{N}$, to approximate the solution of the following Fredholm integral equation

$$f(y) - \mu \int_0^{\infty} k(x, y) f(x) x^{\alpha} e^{-x^{\beta}} dx = g(y), \quad y \in (0, +\infty),$$

where $\mu, \in \mathbb{R}$, $\alpha > -1$, $\beta > 1/2$, f is the unknown function, k is smooth and g is singular at the origin.

Here, we discuss about the regularizing parameter q . In fact, a suitable choice of this is necessary to avoid that the numerical convergence is compromised.

The talk is based on joint work with G. Mastroianni.

References

- [1] L. Fermo, *A Nyström method for a Class of Fredholm integral equations of the third kind on unbounded domains*, submitted.