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Dedicated to Professor LAZĂR DRAGOȘ on his 75<sup>th</sup> birthday

## Spline Approximation Techniques and Regularization Methods for First Kind Integral Equations

Elena PELICAN\*

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**Abstract** - In this paper we realize a study on spline approximation method and different types of regularization techniques (like multilevel Landweber iteration, and a multilevel Tikhonov schemes with zero's order stabilizers). All these methods are applied to several (linear) first kind integral Fredholm equations. Advantages of developed methods are proved by numerical experiments when compared to some standard techniques.

**Key words and phrases** : first kind integral equation, linear least-squares problem, minimal norm solution, spline functions, regularization methods, projection, collocation.

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