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Didenko, Viktor, Odessa State University, Ukraine

On Peculiarities of Approximation Methods for Singular Integral Equations with Conjugation

Singular integral equations with conjugation appear in elasticity theory, acoustics, and hydrodynamics. It is well known that many of approaches to investigating the stability of numerical methods for these objects are very close to those for equations without conjugation. It would seem the corresponding results concerning stability should also be similar with each other. However, such an assertion is far from being true. In our talk we are going to present some results pointed out such distinctions for widely used approximation methods, including collocation, qualocation and a number of quadrature ones. In particular, we give necessary and sufficient conditions for stability of the above methods, and study Fredholm properties of special operators in terms of which these conditions are formulated.