

# NYSTRÖM TYPE CLENSHAW-CURTIS QUADRATURE FOR THE WIENER-HOPF INTEGRAL EQUATION

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**Abstract.** Numerical approximation scheme based on the spectral type of Clenshaw-Curtis Quadrature is investigated for the Wiener-Hopf integral equations of the form

$$x(t) + \int_0^{\infty} k(|t-s|)x(s)ds = y(t)$$

whose kernel  $k(|t-s|)$  is the difference of two variables. The method presented here shows a good accuracy in the numerical solution especially for a kernel which is either discontinuous or not smooth along the main diagonal  $t = s$ . We shall discretize the finite-section of the given equation with Schur product. The composite rule is also described in detail. The corresponding  $C^{++}$ -code is available upon by request.

**Key words.** integral equations, discontinuous kernels, approximation, continuum transfer equation.

**AMS subject classifications.** 45-xx, 65Rxx, 65R10, 65Fxx, 68Uxx, 74Axx, 81-xx.

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