

NUMERICAL INTEGRATION OVER THE SQUARE IN THE
PRESENCE OF ALGEBRAIC/LOGARITHMIC SINGULARITIES
WITH AN APPLICATION TO AERODYNAMICS

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A method based on one-dimensional Gaussian quadratures is developed for evaluating double integrals of the type indicated in the title. If the singularities occur only along the diagonal and the regular part of the integrand is a polynomial of total degree d , the method can be made exact by choosing the number of quadrature points larger than, or equal to, $1 + d/2$. Numerical examples are given as well as an application to a problem in aerodynamics.