

## Computing singular and near-singular integrals in high-order boundary elements

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We present in this talk algorithms for computing singular and near-singular integrals arising when solving the 3D Helmholtz equation with high-order boundary elements. These are based on the computation of the preimage of the singularity on the reference element using Newton's method, singularity subtraction with high-order Taylor-like asymptotic expansions, the continuation approach, and transplanted Gauss quadrature. We demonstrate the accuracy with several numerical experiments, including the scattering by two nearby half-spheres.