ELECTROSTATICS AND GHOST POLES IN NEAR BEST FIXED POLE RATIONAL INTERPOLATION[*]

JORIS VAN DEUN[†]

Abstract. We consider points that are near best for rational interpolation with prescribed poles in the same sense that Chebyshev points are near best for polynomial interpolation. It is shown that these interpolation points satisfy an electrostatic equilibrium problem involving the fixed poles and certain 'ghost' poles. This problem is closely related to Lamé equations with residues of mixed sign.

Key words. Rational interpolation, Chebyshev weight, zeros, potential theory.

AMS subject classifications. Primary 33C45, secondary 42C05.