

JOE CALLAGHAN, University of Toronto

*A Green's function for theta-incomplete polynomials*

Let  $K$  be a compact subset of  $n$ -dimensional complex space and  $f$  a continuous function on  $K$ . For  $0 < \theta < 1$ , define a  $\theta$ -incomplete polynomial as any polynomial  $P$  with no terms of degree smaller than  $\theta$  times the degree of  $P$ . We seek necessary and sufficient conditions on  $f$  and  $K$ , for  $f$  to be the uniform limit on  $K$ , of  $\theta$ -incomplete polynomials. Our approach is to define an appropriate Green's function for  $\theta$ -incomplete polynomials. Then the solution to the approximation problem can be phrased in terms of the Monge–Ampère measure of this function. More precisely, this type of approximation will be possible exactly when  $f$  vanishes outside of the support of this measure.