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Maxim L Yattselev* (maximy@uoregon.edu). *Nuttall's theorem on algebraic S-contours.*

Given function f holomorphic at infinity, the n -th diagonal Padé approximant to f , say $[n/n]_f$, is a rational function of type (n, n) that has the highest order of contact with f at infinity. Equivalently, $[n/n]_f$ is the n -th convergent of the continued fraction representing f at infinity. Nuttall's theorem provides an asymptotic formula for $[n/n]_f$ and all n large enough in the case where f is the Cauchy integral of the reciprocal of a non-vanishing smooth weight with respect to the arcsine distribution on $[-1, 1]$. This talk discusses the extension of Nuttall's theorem to Cauchy integrals on the so-called algebraic S-contours. (Received October 23, 2012)