On Connecting Equilibrium Measures with Quadrature Domains

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We explore the connection between supports of equilibrium measures and quadrature identities, especially in the case of point sources added to the confining potential $V(w) = |w|^{2p}$ with $p \in \mathbb{N}$. Along the way, we characterize smooth one-point quadrature domains with respect to weighted area measure $|w|^{2p} dA$ and complex boundary measure $|w|^{-2p} dw$.

Joint work with P. D. Dragnev.