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Paul Fili* (paul.fili@okstate.edu), 532 Mathematical Sciences Bldg, Oklahoma State University, Stillwater, OK 74078. *Effective unlikely intersections and a metric of mutual energy.*

We introduce a metric of mutual energy for adelic measures associated to the Arakelov-Zhang pairing. Using this metric and potential theoretic techniques involving discrete approximations to energy integrals, we prove an effective bound on a problem of Baker and DeMarco on unlikely intersections of dynamical systems, specifically, for the set of complex parameters c for which $z = 0$ and 1 are both preperiodic under iteration of $f_c(z) = z^2 + c$. (Received September 25, 2017)