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Ronen Eldan* (roneneldan@gmail.com). *On Talagrand's convolution conjecture in Gaussian space.*

We prove the following logarithmic anti-concentration result in Gaussian space: let X be a random vector in \mathbb{R}^n with law μ and let $f(x)$ be the density of μ with respect to the Gaussian measure. Suppose that $Hess(\log(f(x))) > -10Id$ for all x , in the positive definite sense. Then one has for all $t > 0$, $P(\log f(X) \in [t, t + 1]) < t^{-c}$ where c is some positive constant (depending on the number 10 above). An immediate consequence of this result is a positive answer to Talagrand's question about the regularization of L_1 functions under the convolution operator in Gaussian space. This is a joint work with James Lee. (Received September 01, 2014)