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We consider asymptotic (as $N \rightarrow \infty$) geometrical properties of N -point configurations $\{x_i\}_{i=1}^N$ on a d -rectifiable set A that minimize a *weighted Riesz s -energy* functional of the form

$$\sum_{i \neq j} \frac{w_N(x_i, x_j)}{|x_i - x_j|^s},$$

for a given ‘weight’ function w_N on $A \times A$ and a parameter $s > 0$.

In previous work, we described the asymptotic distribution for such problems when the weight w was a ‘CPD’ weight not depending on N . We extend these results to the case of N -dependent weights. In particular, we consider weights that lead to lower complexity energy calculations. (Received December 13, 2011)