

The Extremal Energy Problem and Sequences modulo one

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The discrete extremal energy problem is concerned with investigating the properties of N -point systems on a manifold extremalizing a given energy functional. The model interaction usually considered is that of the classical Coulomb potential $1/r$ (in $\mathbb{R}^3$), or its generalization the Riesz s -potential $1/r^s$, $s \neq 0$, where r denotes the Euclidean distance in the embedding space. The logarithmic potential $\log(1/r)$ can be seen as the limit case $s \rightarrow 0$. For s large, such points approximate best-packing points on the manifold. One can also think of other energy functionals. In our talk we study sequences modulo one in the context of extremal energy problems.