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## Probing infinity in bounded two-dimensional electrostatic systems

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### Abstract

The total electrostatic energy of systems of identical particles of equal charge is studied in configurations bounded in space, but divergent in the number of charges. This approach shall guide us to unveil a non-linear, functional form specifying the divergent nature of system energy. We consider fractals to be physical entities, with charges located in their vertices or nodes. This description is interesting since features, such as the corresponding fractal dimension, can characterize the total energy EN. Finally, at local length scales, we describe how energy diverges at charge accumulation points in the fractal, that is, almost everywhere by definition. Published by AIP Publishing.

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