ON GLOBAL MINIMIZERS OF THE INTERACTION ENERGY WITH REPULSIVE-ATTRACTIVE POTENTIALS

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ABSTRACT

In this talk, we discuss on the geometry of global minimizers of interaction enery.   In [1], the authors (Jose et all) studied the interaction energy with strongly repulsive potentials. More specifically, they showed that the Hausdorff dimension of the support of minimizer is greater than or equal to β for the β repulsive interaction energy. On the other hand, for the case of mildly repulsive interaction energy, the authors of [2] (Figalli et all) proved that the support of global minimizer consists of finite points. In addition, in the one-dimensional case, they gave quantitative bounds on the cardinal of the support. In a joint work with Kang and Seo [3], we extend the result of [2] to arbitrary dimension. More precisely, under a bit stronger convexity assumption, we give an upper estimate of the cardinal of the support of global minimizers of mildly repulsive interaction energy for arbitrary dimension.

REFERENCES

References are to be listed at the end of the paper in the order of the reference, and are referred to in the paper by the numbers in brackets such as [1, 2]. Style the reference list according to the following examples.

1. Balague, D., Carrillo, J. A., Laurent, T. and Raoul, G., "Dimensionality of local minimizers of the interaction energy," *Arch. Rational Mech. Anal,* Vol. 209, 2013, pp. 1055-1088.

2. Carrillo, J. A., Figalli, A. and Patacchini, F. S., "Geometry of minimizers for the interaction energy with mildly repulsive potentials," *Ann. I. H. Poincare*, Vol. 34, 2017, pp. 1299-1308.

3. Kang, K., Kim, H. K. and Seo, G., "Cardinality estimation of global minimizer for interaction energy with mildly repulsive potentials," *Preprint.*