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Gamma-convergence of the square sticky disk to the octagonal crystalline perimeter

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We consider a variant of the sticky disk model for N interacting particles in the plane, where distances are evaluated by means of the supremum norm instead of the Euclidean norm. We show crystallization for minima of such an energy (for fixed N) and we prove Gamma-convergence (in the limit as N goes to infinity) of suitably rescaled energies to the anisotropic perimeter with octagonal Wulff shape. The key result to establish this is an energy decomposition for graphs in the plane that hinges upon the notion of angular defect, and that is quite flexible and potentially adaptable to other energies. The talk is based on joint work with Lucia De Luca (IAC-CNR).

Presenter: DEL NIN, Giacomo (MPI MiS Leipzig)