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Alexander Elgart* (aelgart@vt.edu), **Leonid Pastur** and **Mariya Shcherbina**. *Large block properties of the entanglement entropy of free disordered fermions.*

We consider the macroscopic disordered system of free lattice fermions with the one-body Hamiltonian which is the Schrödinger operator with ergodic potential. Assuming that the expectation of the kernel of the Fermi projection P of the Hamiltonian decays exponentially, we prove that the entanglement entropy satisfies the area law. Moreover, we identify the corresponding limit and show that in the dimension higher than one the entanglement entropy is self-averaging. (Received January 18, 2016)