

Feldmann et al. introduced the reconfigurable circuit extension to the geometric amoebot model. By modifying their local pin configurations, amoebots are able to construct complex circuit structures that allow for fast communication between amoebots connected by the same circuits. Padalkin et al. investigated the structural power of these reconfigurable circuits and demonstrated that the computation of global maxima, canonical skeletons and spanning trees is possible in time $O(\log^2(n))$ w.h.p. In this talk we present how, based on a canonical skeleton, which is a canonical representation of an amoebot structure, symmetry properties of the structure such as k -fold rotational symmetry or reflection symmetry can be computed in the circuit model in polylogarithmic time w.h.p. In our solution, we show and use that it is possible to compute epsilon-biased distributions using logarithmically many random bits in polylogarithmic time and, based on this, compare canonical skeletons with overall logarithmic message complexity. Our technique can also be applied to other problems: for example, it is possible in the circuit model to generate prime numbers in polylogarithmic time w.h.p.