

Tytuł: **Automatic sequences as good weights for ergodic theorems**
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We study correlation estimates of automatic sequences (that is, sequences computable by finite automata) with polynomial phases. As a consequence, we provide a new class of good weights for classical and polynomial ergodic theorems, not coming themselves from dynamical systems. We show that automatic sequences are good weights in L^2 for polynomial averages and totally ergodic systems. For totally balanced automatic sequences (i.e., sequences converging to zero in mean along arithmetic progressions) the pointwise weighted ergodic theorem in L^1 holds. Moreover, invertible automatic sequences are good weights for the pointwise polynomial ergodic theorem in L^r , $r > 1$. This talk is based on joint work with Tanja Eisner.