Pseudorandom Generators and Derandomization.

We will define the complexity-theoretic notion of a pseudorandom generator: a procedure that takes a short string of truly random bits and stretches it to a long string of bits that "look random" to a certain class of algorithms.

We will then describe how this notion is related to the problem of deterministically simulating randomized algorithms and of making certain applications of the probabilistic method constructive.

Finally, we will highlight the specific setting of pseudorandom generators that "look random" to memory-bounded algorithms, and describe known results and open problems. (Received September 22, 2015)