**Transfer Results and Number Theoretic Conjectures**
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The natural NP-complete problem in the Blum-Shub-Smale (BSS) model over the complex numbers is to decide whether a system of complex polynomial equations has a solution. If we restrict the input to integer polynomials and still ask for a complex solution, we get a problem which can be studied in the Boolean model. Under number theoretic assumptions like the Generalized Riemann Hypothesis it can be shown that this problem is contained in a randomized version of NP. This implies a transfer theorem between the BSS and the Boolean model of computation. In the talk we will discuss this and similar transfer results.