

**CS 2429F – Winter 2014**  
**Paper List**

Lecture 1 Introduction, restriction method and lower bound for Resolution proofs of PHP.

1. Beame and Pitassi. Simplified and Improved Resolution Lower Bounds.

Lecture 2 Hastad's Switching Lemma and the lower bound for PARITY.

1. Beame. A Switching Lemma Primer.

Lecture 3 Applications of the AC0 lower bound.

1. Linial, Mansour and Nisan. Constant-depth circuits, Fourier Transform and Learnability.
2. Nisan, Wigderson. Hardness versus Randomness.
3. Impagliazzo, Matthews, and Paturi. A Satisfiability Algorithm for AC0.
4. Chen, Kabanets, Kolokolova, Shaltiel, Zuckerman. Mining Circuit Lower Bound Proofs for Meta-Algorithms.
5. Chattopadhyay and Santhanam. Lower Bounds on Interactive Compressibility by Constant-Depth Circuits.

Lecture 4 Formula size lower bounds and Average-case Formula size bounds.

1. Hastad. The Shrinkage exponent is 2.
2. Komargodski, Raz and Tal. Improved Average-Case Lower Bounds for DeMorgan Formula Size.