

The PhD studies will be funded by a recently granted VR (Swedish Research Council) project that supports excellent fundamental research. In this project we will derive fundamental bounds for distributed decision problems. The Witsenhausen counterexample¹ is an outstanding toy example that significantly helped us to understand the fundamental difficulties of distributed decision problems. We will approach those problems with a fresh information-theoretic approach. In this task we wish that you make yourself a bit familiar with the research problem. Accordingly, we would like you to have a look at the Witsenhausen counterexample and briefly write (at most one page) about the following:

- 1. What conjecture was disproved by the Witsenhausen counterexample?*
- 2. Describe in a short paragraph the key idea of the construction of the counterexample.*

¹ H. Witsenhausen, "A counterexample in stochastic optimum control." SIAM J. Control, pp. 131–147, 1968.

Online available e.g.

<http://www.control.ece.ntua.gr/UndergraduateCourses/StochElegx/H.%20S.%20WITSENHAUSEN.pdf>