1163-62-15 **Lenka Zdeborova***, EPFL École Polytechnique Fédŕale de Lausanne. *What Physics Teaches us about Computation in High Dimensions.*

Computational questions in high-dimensional problems are ubiquitous, yet we still lack a satisfying theoretical framework able to answer most of them. Corresponding problems often map to certain statistical-physics systems where the high dimension translates into a large number of interacting elements. Theoretical tools of statistical physics can then be deployed to study computational problems and inform both mathematical and algorithmic developments. We will highlight some key results in this field with examples of applications in artificial neural networks, and in signal processing. We will discuss results that have led to new mathematical development and well as others that are still open and inspiring current research. (Received April 22, 2020)