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## ONE WORLD OPTIMIZATION SEMINAR

October 19<sup>th</sup>, 2020 @ 15:30 CEST (Central European Summer Time)

**BORIS POLYAK**

**(Institute for Control Science Moscow)**

### **Static Linear Feedback for Control as Optimization Problem**

**Abstract.** If we fix control as static linear feedback, an optimal control problem reduces to optimization problem with respect to the feedback gain matrix. We consider properties of the arising performance functions (smoothness, convexity, connectedness of sublevel sets) and provide gradient-like methods for optimization. The following examples are addressed: linear quadratic regulator; static output feedback; design of low-order controllers. Possible extensions are discussed.

Work in collaboration with I.Fatkhullin, P.Scherbakov, M.Khlebnikov.

*The link of the zoom-room of the meeting and the corresponding password will be announced the day before the talk on the mailing list of the seminar, to which one can subscribe on <https://owos.univie.ac.at>.*