

## Group Seminar

Multivariate Algorithms and Quasi-Monte Carlo Methods

EC- $(s, t)$ -weak tractability of multivariate linear problems in the average case setting

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### Abstract

We study  $E$ - $(s, t)$ -weak tractability of multivariate linear problems in the average case setting. This extends our earlier work in the worst case setting. The parameters  $s \geq 0$  and  $t \geq 0$  allow us to study the information

complexity  $n(\varepsilon, d)$  of a  $d$ -variate problem with respect to powers of  $\ln \varepsilon^{-1}$  and  $d$ . We consider the absolute and normalized error criteria. We deal with general linear problems and linear tensor product problems. We show necessary and sufficient conditions for EC- $(s, t)$ -weak tractability. In the case of general linear problems these conditions are matching. For linear tensor product problems, we also show matching conditions with the exception of some cases where  $s > 1$ , in general.