

The moment problem for infinite dimensional spaces

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Abstract

In this talk, we shall present the multivariate moment problem in the general context of the polynomial algebra $\mathbb{R}[x_i \mid i \in \Omega]$ in an arbitrary number of variables $x_i, i \in \Omega$. We shall introduce the class of *constructibly Radon measures* (cf. [1]) on an infinite dimensional real vector space, and explain how they provide solutions to the above moment problem. We shall then recast our results in terms of *cylinder measures*, thus providing a comparison to the results of [2].

References:

- [1] M. Ghasemi, S. Kuhlmann, M. Marshall, Moment problem in infinitely many variables, Israel J. Math. 212(2016), 989-1012
- [2] K. Schmüdgen, On the infinite dimensional moment problem, arxiv: 1712.06360 (2017)

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