

**"ON THE TRUNCATED MOMENT PROBLEM"**  
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Let  $A$  be a finite-dimensional vector space of real-valued continuous functions on a locally compact Hausdorff space  $X$ . A linear functional  $L$  on  $A$  is called a *moment functional* if there exists a (positive) Radon measure  $\mu$  on  $X$  such that

$$L(f) = \int_X f(x) d\mu(x) \text{ for all } f \in A.$$

The most important special case are the polynomials in  $d$  variables of degree at most  $2n$ . In this case, the corresponding problem is called *truncated moment problem*.

In this talk we treat three special topics about moment functionals and present some results, most of them obtained in the last years (partly in joint work with Philipp di Dio). First, we discuss the core variety and the set of atoms of representing measures of a moment functional. Secondly, we review Hankel matrices of moment functionals and develop them as a useful tool for the truncated moment problem. Thirdly, we study the maximal masses at points of representing measures of moment functionals.