

**”THE STOCHEL–SZAFRANIEC THEOREM, THE FIBRE
THEOREM AND ALL THAT”
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In 1991, J. Stochel and F. H. Szafraniec published an important existence theorem on the one-dimensional complex moment problem. It states that a linear functional on the polynomial algebra $\mathbb{C}[z, \bar{z}]$ is a moment functional if and only if it admits an extension to a positive functional on the $*$ -algebra of some particular larger semigroup. In the talk this theorem is discussed and proved.

The second part of the talk is about the fibre theorem for general commutative real unital algebras which was proved by the author (2015). A number of applications of this result are given. In particular, the Stochel–Szafraniec theorem and T. Bisgaard’s theorem on the two-sided one-dimensional complex moment problem are derived from the fibre theorem.