



Michał Jasiczak (mjk@amu.edu.pl) Faculty of Mathematics and Computer Science, Adam Mickiewicz University, Poznań, Poland, *Carleson embedding theorem on convex finite type domains*.

ABSTRACT. An important aspect of the theory of Hardy spaces is a characterization of those positive Borel measures μ supported in D for which the following inequality holds

$$\int_D |f|^p d\mu \leq C \int_{bD} |f|^p d\sigma, : 1 \leq p < \infty.$$

The inequality, often referred to as the Carleson-Hörmander inequality, says that the identity operator continuously embeds the Hardy space into the space $L^p(D, \mu)$. The corresponding measures are called Carleson measures μ . During the talk we shall discuss key steps of the proof of this inequality in case of convex finite type domains. The standard argument relies on estimates of the Poisson-Szegő kernel, which in turn requires precise estimates from below of the Szegő kernel. Such estimates are not known, which is the reason why in case of convex finite type domains other arguments are needed. Let us only say here that our method is based on existence of a Whitney type cover and boundedness of certain maximal operators. Both the cover and the maximal operators are defined in a way, which reflects the geometry of the domain.