Hardy spaces with variable exponents and maximal operators

Ferenc Weisz, **Speaker**

Department of Numerical Analysis, Eötvös L. University (Hungary)

e-mail weisz@inf.elte.hu

Let $p(\cdot) : \mathbb{R} \to (0, \infty)$ be a variable exponent function satisfying the globally log-Hölder condition. We introduce the variable Hardy spaces $H_{p(\cdot)}(\mathbb{T})$ and $H_{p(\cdot)}[0, 1)$ and give their atomic decompositions. It is proved that the maximal operator of the Fejér means of the Fourier series and Walsh-Fourier series is bounded on these spaces. This implies some norm and almost everywhere convergence results for the Fejér-means, amongst others the generalization of the well known Lebesgue's theorem.