

Hilbert transforms on Coxeter groups and groups acting on buildings

Xiaoqi Lu

Cotlar identities were used as a tool to show the L_p ($1 < p < \infty$) boundedness of Hilbert transforms on the real line. In 2017, Mei and Ricard first generalized Cotlar identities to the non-commutative setting and showed the L_p -boundednesses ($1 < p < \infty$) of Hilbert transforms on free groups. Then in 2022, González-Pérez, Parcet and Xia generalized the result on groups acting on \mathbb{R} -trees by using a geometric model. In this talk, we will further discuss this topic on Coxeter groups (abstract reflection groups) and groups which admit actions on buildings. This is a joint work with Runlian Xia.