SOME FOURIER MULTIPLIERS ON SOME DISCRETE GROUP

Abstract. The convergence of Fourier series is a important subject in harmonic analysis. Now, let G be a discrete group and $m_n : G \to \mathbb{C}$ be a sequence of multipliers on G. We will consider about the almost uniformly convergence, which is the noncommutative analogue of pointwise convergence, of Fourier series on some discrete group G related to some multiplies m_n. In this case, Fourier series is defined by $T_{m_n}(f) = \sum_{g\in G} m_n(g)\hat{f}(g)\lambda_g \in L_p(vN(G))$, where $vN(G)$ means the group von Neumann algebra. In order to get the almost uniformly convergence, of such Fourier series we need to prove the following maximal inequality for some $1 \leq p \leq \infty$:

$$\|\sup_n{}^+ T_{m_n} f\|_p \leq C_p \|f\|_p.$$

We will show some results about the Direchlet multipliers on finite generated discrete group, Féjer multipliers on amenable discrete groups and Bochner-Riesz multipliers on discrete group equipped a finite dimension cocyles.