

In what follows, we fix an abelian group A . We will freely use the theory and results of ??

Definition 0.1. An A -graded spectral sequence is the data of a collection of A -graded abelian groups $\{E_r^*\}_{r \geq r_0}$ along with homomorphisms of A -graded abelian groups $d_r : E_r \rightarrow E_r$ (usually of nonzero degree) such that $d_r \circ d_r = 0$ and $E_{r+1} = \ker d_r / \operatorname{im} d_r$.