

Exercises

11.31 [11F] Let $(Z, \|\cdot\|_Z)$ be an additional normed space, and $B : Y \rightarrow Z$ a linear application. We similarly define

$$\|B\|_{Y,Z} \stackrel{\text{def}}{=} \sup_{y \in Y, \|y\|_Y \leq 1} \|By\|_Z \quad ;$$

show that

$$\|AB\|_{X,Z} \leq \|A\|_{X,Y} \|B\|_{Y,Z} \quad .$$