

Exercise

Let $\pi_0 : E_0 \rightarrow M$ and $\pi_1 : E_1 \rightarrow M$ be two vector bundles, and let $\mathcal{L} : \Gamma(E_0) \rightarrow \Gamma(E_1)$ be an \mathbb{R} -linear and $C^\infty(M)$ -homogeneous map. Show that there exists $L \in \Gamma(\text{Hom}(E_0, E_1))$ such that $\mathcal{L}(s)|_p = L_p s|_p$, where $\text{Hom}(E_0, E_1) \simeq E_0^* \otimes E_1$.

Hint: Proceed as in Lemma 2.2 from the lecture.