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category of representations

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Defines	morphisms of representations
Defines	representation morphism

Definition 0.1. The *category* $Rep(\mathbf{G})$ of *representations* has objects the representations of a groupoid \mathbf{G} , and as morphisms the *intertwiners* $i : \rho_j \longrightarrow \rho_k$ that are (vector) bundle morphisms $i : E \longrightarrow E$ over the manifold M so that $\rho_k(g) \circ i = i \circ \rho_j$. Because representations are functors $\rho : \mathbf{G} \longrightarrow \mathbf{Vect}$, an intertwiner i is in fact a natural transformation between two such functors that are groupoid representations of \mathbf{G} , in this case implemented *via* the vector bundle morphisms $i : E \longrightarrow E$.