

Title

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Remark 1.0.1: What we've been calling a *torsor* (a sheaf with a group action plus conditions) is called by some sources a **pseudotorsor** (e.g. the Stacks Project), and what we've been calling a *locally trivial torsor* is referred to as a *torsor* instead.

Recall that statement of ??.

Proof (of Hilbert 90).

Let $\tau = X_{\text{zar}}, X_{\text{ét}}, X_{\text{fppf}}$, then the data of a GL_n -torsor split by a τ -cover $U \rightarrow X$ is the same as descent data for a vector bundle relative to U/X . This descent data comes from the following:

$$\begin{array}{c}
 U \times_X U \\
 \pi_1 \downarrow \quad \downarrow \pi_2 \\
 U \\
 \downarrow \\
 X
 \end{array}$$

That U trivializes our torsor means that $\pi^*T = \pi^*G$ as a G -torsor, where G acts on itself by left-multiplication. We have two different ways of pulling back, and identifications with G in both, yielding

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