Meinrenken: Twisted spin-c structures (joint w/ Alekseev)

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Dirac Structures: (V,E)

<u>Def</u> A Dirac structure on a vector bundle $V \to M$ is a lagrangian subbundle $E \subset V \oplus V^*$ relative to the obvious inner product.

maximally isotropic subbundle

<u>Examples</u> (V,V), (V,V^*), (V, Gr_w) $w \in \Gamma(\Lambda^2 V^*)$

$w: V \to V^*$ s.t. $w(x)(y) = -w(y)(x)$

<u>Claim</u> $\{(x, w(x))\}$ is a Dirac structure. [obvious]

In diagrams: w: E: $\{(\downarrow, \ldots)\}$

<u>Def</u> A morphism of Dirac structures

$(\Theta, w): (V,E) \to (V', E')$

s.t. Θ is a vector bundle map $V \to V'$

w is in $\Gamma(\Lambda^2 V^*)$

s.t. ....

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Dixmier-Douady bundles ("gerbes")

<u>Def</u> A DD-bundle $\mathcal{A} \to M$ is a bundle of $*$-algebras with typical fiber

$\mathbb{K}(H) = \overline{L_{fin}(H)}$ ("compact operators")

<u>Example</u> If $V \to M$ is an even rank v.b., $Cl(V) \to M$ is a DD bundle.

clifford

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