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SUPERGRAVITY & TWARA STRUCTURES (not covered in lectures)

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and references in papers above....

- Six-dimensional (1,0) supergravity
(and reduction to five-dimensional)

(M, g) Lorentian 4-dim. spin manifold

$$H \in \Omega_+^3(M) \quad \Delta H = 0$$

$$\text{Killing spinor: } D_X \epsilon := \nabla_X \epsilon - \frac{1}{2} X \lrcorner H \cdot \epsilon = 0$$

where $\epsilon \in \Gamma(S(M))$



spinor bundle is bundle of spinors with pos. chirality,
in this case, i.e., $S(M)|_x \cong \mathbb{H}^2$

There are 3 max. susy solutions:

1. M with $F=0$

2. $AdS_3 \times S^3$

3. a Lorentian Cahen-Wallach space

They are all Lie groups with bi-invariant metrics (see "Lorentian symmetric spaces in supergravity" by FOF for more details) and the Lie algebra of Killing v.f. preserving H is known

QUESTION: Compute the Killing superalgebras of these algebras.

QUESTION: Similar problem in dimension 5,
(see arXiv: hep-th /  GEILO 0306248)

