

Reviewed one particle states according to their transformation under Poincaré group →

We rederived the massive cases in $SL(2, \mathbb{C})$ language.

We ~~to~~ discussed the massless cases ~~to~~ again using $SL(2, \mathbb{C})$

→ showed that the states are completely characterized by their properties under $SO(2) \times T[2]$

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finite dimensional representations are characterized by helicity.

explained 'coverage of a group', and relationship of

$SO(3, 1)$ and $SL(2, \mathbb{C})$

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from this understood spin $1/2$ integer representations.