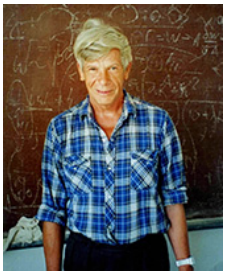

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Massless 6D infinite spin fields

Tuesday, 11 October 2022 17:10 (25 minutes)

Massless irreducible representations of the Poincaré group in the six-dimensional Minkowski space are studied.
It is shown that the finite spin representation is defined by two integer or half-integer numbers
while the infinite spin representation is defined by the real parameter and one integer or half-integer number.
Massless infinite spin irreducible representations in the space of the two-twistor fields are constructed and a full set of equations of motion for such fields is found.
A field twistor transform is constructed and infinite spin fields are found in the space-time formulation with an additional spinor coordinate.
A new 6D infinite spin field theory in the light-front formulation is presented.
The found infinite-spin fields in the light-cone frame depend on two sets of the SU(2)-harmonic variables.
The generators of the 6D Poincaré group and the infinite spin field action in the light-front formulation are presented.

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