

Massive twistor worldline in electromagnetic fields

Saturday 20 July 2024 10:45 (15 minutes)

We study the (ambi-)twistor model for spinning particles interacting via electromagnetic field, as a toy model for studying classical dynamics of gravitating bodies including effects of both spins to all orders. The all-orders-in-spin effects are encoded as a dynamical implementation of the Newman-Janis shift, and we find that the expansion in both spins can be resummed to simple expressions in special kinematic configurations, at least up to one-loop order. We also observe that cutting rules associated with causality prescription for worldline propagators can be viewed as Poisson brackets of subdiagrams.

Alternate track

I read the instructions above

Yes

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Session Classification: Formal Theory

Track Classification: 10. Formal Theory