Les Rencontres de Physique des Particules 2022



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Consistent propagation of spin 3/2 and 2 in an electromagnetic background

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Consistent equations of motion and Lagrangian for higher spin states is an old problem which is still under investigation. One important challenge comes from the "Velo-Zwanziger problem", which states that charged massive particles of spin>1, minimally coupled to an external electromagnetic field, suffer from acausality and loss of hyperbolicity. In this talk, I will present explicit consistent Lagrangians describing charged massive spin-3/2 and spin-2. Though coupled in the Lagrangian to lower spins, they appear decoupled in the resulting equations of motion.

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