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LSZ Reduction Formula for massive charged vector bosons in an constant magnetic field

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Content

High intensity magnetic fields appear in a plethora of physical scenarios that are important to understand to fully explain. Some of these include heavy-ion collisions, the formation of compact objects such as magnetars and in the early Universe. In particular, The formation of charged and massive vector particles that are affected by such fields is a phenomenon that should be studied. In this presentation I will share a methodology, analogous to the vacuum case, to formulate the Lehmann-Symanzik-Zimmermann (LSZ) Reduction Formula for massive charged vector boson particles in the presence of a constant magnetic field. This LSZ derivation rests on the charged and massive vector boson propagator in the presence of a magnetic field written in the Ritus Eigenfunction representation.

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