

High order derivative theories and noncommutativity

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Abstract content

In this talk we show that there exist a relationship between high order derivative theories and systems with noncommutativity. To establish this relation we use as an example a mechanical model of the Chern-Simons type with second order temporal derivatives. Intrinsically this model presents noncommutativity in the velocities. However, at the quantum level we obtain states with negative norm. To avoid this issue we use a perturbative method to treat the high order derivatives and as consequence we obtain a noncommutative theory but now in the coordinates.

Summary

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