Two diploma thesis proposals

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May 13, 2022

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- $$-\frac{\hbar}{2M}\frac{\partial^2\Psi(x,t)}{\partial^2 x} + W(x,t)\Psi(x,t) = i\hbar\frac{\partial}{\partial t}\Psi(x,t)$$

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- $$f(x, t) = \frac{Mvx - \frac{1}{2}Mv^2 t}{\hbar}$$

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- NC Geometry:
- $$\textit{Basic objects} : \tau_\mu , \ h^{\mu\nu} \ , \hat{\Phi}$$
- $$-i\hat{v}^\mu \partial_\mu \psi - \frac{1}{2} i \psi e^{-1} \partial_\mu (e \hat{v}^\mu) + \frac{1}{2m} e^{-1} \partial_\mu (e h^{\mu\nu} \partial_\nu \psi) - m \hat{\Phi} \psi = 0$$

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- Analyse the meaning of gravity in the Penrose's proposal of the collapse of the wave function.

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- What is the goal of this work?
- Study dynamics of the perturbations when
- $$g_{\mu\nu}(x,t) = g^{FRW}_{\mu\nu}(t) + h_{\mu\nu}(x,t)$$
- Non-trivial task -since it is necessary to determine proper physical degrees of freedom.
- Important application:

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Cosmic microwave background, structure formations