



On the possibility of detecting scalar field objects

Darío Núñez Zúñiga

Universidad Nacional Autónoma de México, México

In this talk I discuss on the possibility that matter be described by a complex massive scalar field and, on this field form compact objects as the ℓ boson stars. Next we use the reported results on gravitational waves generated by such objects, and determine the value interval for the scalar field mass, so that the gravitational waves generated be within the detection range of the present day observatories. We present the corresponding spectrogram that would be seen in the detectors, stressing the fact that, when the colliding ℓ boson stars have high compactness, the gravitational waves profile and the image generated in the spectrogram, is very similar to the one generated by black holes, whereas for lower compactness, the profile and image are remarkably different. We mention that besides the gravitational waves, there are several observable consequences that can be explored for any compact object proposed. We finish the talk by mentioning the efforts made by the Mexican Physics Society to generate physics text for the general public in the Native Communities and express our desire to join these efforts with the similar ones made in Brazil.