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Advanced course: DM

Wednesday 7 February 2024 15:15 (1h 15m)

In the advanced dark matter lectures, we cover a specific class of dark matter candidate, wave dark matter. The wave dark matter encompasses a wide range of bosonic dark matter candidates whose mass is smaller than several electron-volt scales. Being that light, it behaves similar to classical waves rather than a particle, offering unique phenomenology across scales. We will discuss some of the theoretical motivations of wave dark matter. We will also discuss its behavior in the early universe, e.g. how it is produced. Furthermore, we will discuss unique phenomenological consequences of wave dark matter over astrophysical and cosmological scales, emphasizing its differences and similarities with usual particle dark matter. Finally we will discuss several detection strategies for wave dark matter.

Presenter: KIM, Hyungjin (T (Cosmology))