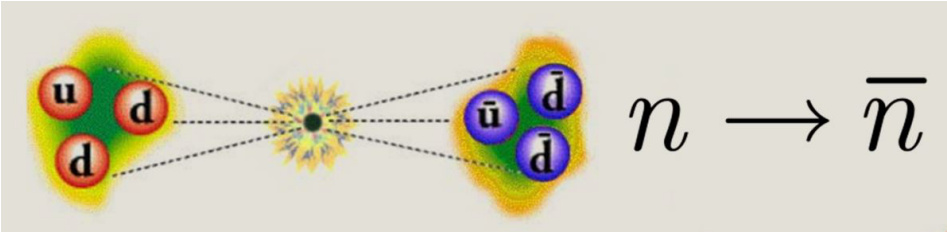


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# Probing high scale theories through $n - \bar{n}$ oscillations

$n - \bar{n}$ oscillations can be used to probe theories at a high energy scale, such as grand unified theories. In this talk I will illustrate this with two examples. In the first example, $n - \bar{n}$ oscillation arises in a left-right symmetric model realized near the GUT scale that provides a solution to the strong CP problem. The $n - \bar{n}$ oscillation time is closely tied to neutrino masses, and is expected to be in the range of $10^8 - 10^{10}$ sec. In the second example, $SO(10)$ grand unified theory breaks to the standard model directly, but leaves behind a color sextet scalar field at the TeV scale. This scalar helps with unification of gauge couplings and leads to $n - \bar{n}$ oscillations, which is closely tied to baryon asymmetry generation. For typical values of the model parameters, $\tau_{n-\bar{n}} \sim 10^9 - 10^{10}$ sec. is obtained.

## Contribution Title

Probing high scale theories through $n - \bar{n}$ oscillations

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