

Low-Energy High-Precision Experiments Standard Model

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Non-Newtonian Gravitational Interactions

Neutron Lifetime Measurement

► Newton's law of gravity (at large scale)

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$$F=G\tfrac{m_1m_2}{r^2}$$

$$V = -G \tfrac{m_1 m_2}{r}$$

where $G = 6.6743 \cdot 10^{-11} \text{m}^3/\text{kg} \cdot \text{s}^2$

► Newton's law of gravity (at large scale)

$$F = G \frac{m_1 m_2}{r^2}$$

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where $G = 6.6743 \cdot 10^{-11} \text{m}^3/\text{kg} \cdot \text{s}^2$

➤ Yukawa-like modified potential (at small scale)

► Newton's law of gravity (at large scale)

$$\begin{split} F &= G \frac{m_1 m_2}{r^2} \\ V &= -G \frac{m_1 m_2}{r} \end{split}$$

where $G = 6.6743 \cdot 10^{-11} \text{m}^3/\text{kg} \cdot \text{s}^2$

► Yukawa-like modified potential (at small scale)

$$V = -G\frac{m_1 m_2}{r} (1 + \alpha \cdot e^{-r/\lambda})$$

where, $\alpha = \text{Strength Factor}$ $\lambda = \text{Yukawa distance}$

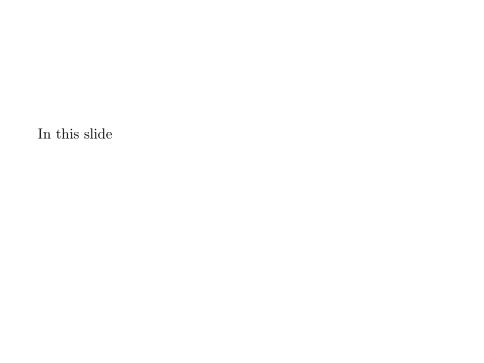
▶ To learn more about α and λ we need to probe the small distance gravitational interaction of particles.

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▶ The Institut Laue Langevin (ILL), Grenoble, France



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And fina	ally everyth	ning will be	there	

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Non-Newtonian Gravitational Interactions

Neutron Lifetime Measurement

Sample frame title

In this slide, some important text will be highlighted because it's important. Please, don't abuse it.

Remark

Sample text

Important theorem

Sample text in red box

Examples

Here's a super important example.

Two-column slide

This is a text in first column.

$$E = mc^2$$

- ► First item
- ► Second item

This text will be in the second column and on a second tought this is a nice looking layout in some cases.