

# 8.701

Introduction to Nuclear  
and Particle Physics

Markus Klute - MIT

2. Symmetries

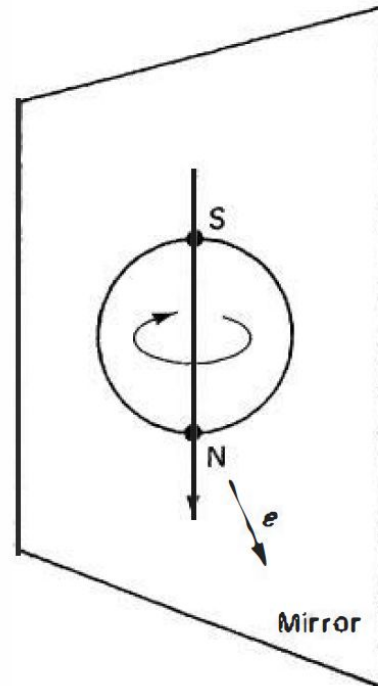
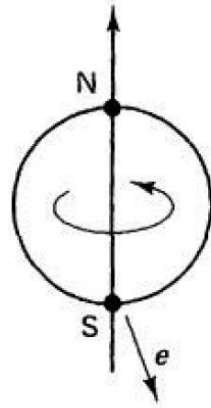
2.3 Parity



# Mirror Symmetry

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Lee and Yang (1956) wondered if there is any experimental tests of parity invariance.



# Chien-Shiung Wu

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1912–1997

Studied at Berkeley

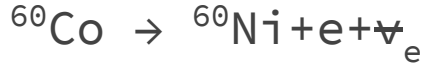
Worked on Manhattan Project

1956 Wu-Experiment

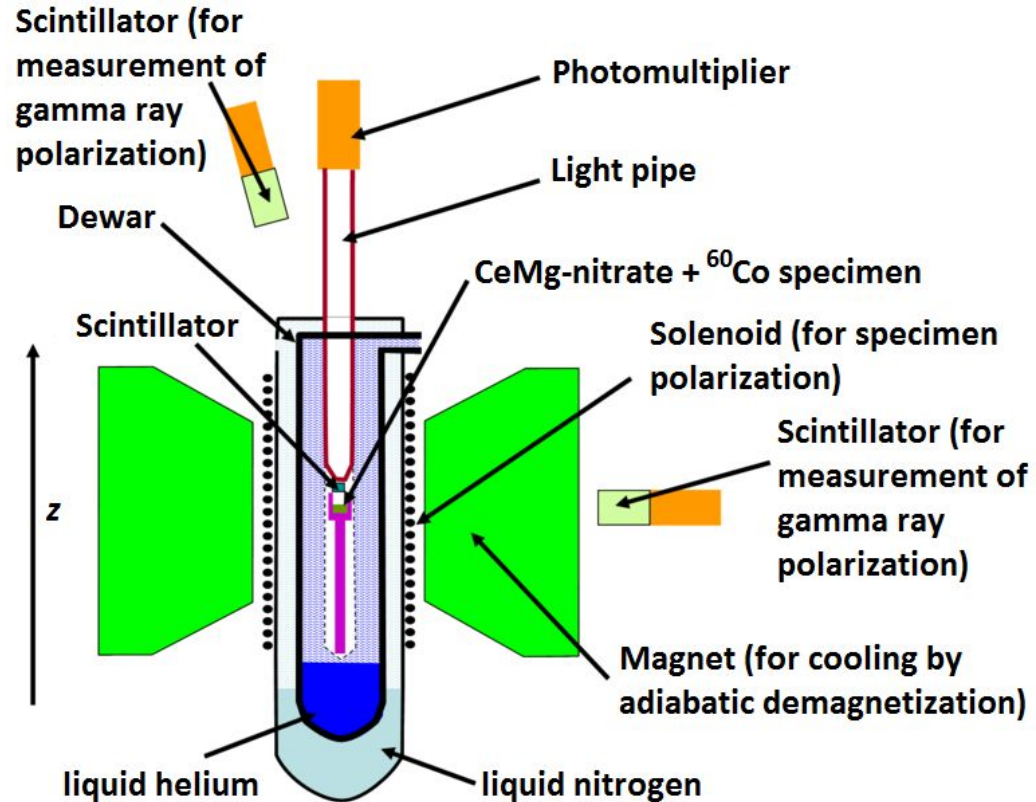
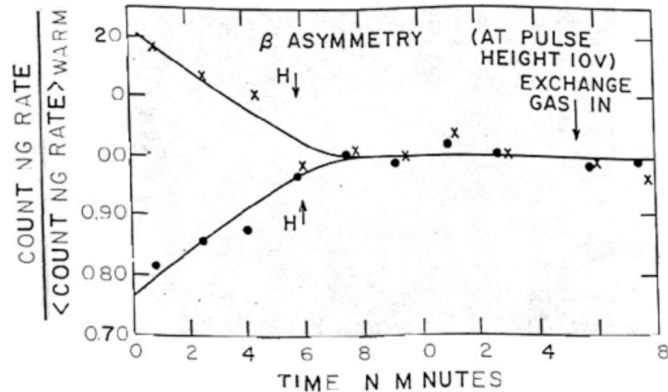
1957 Nobel Prize



# Wu experiment

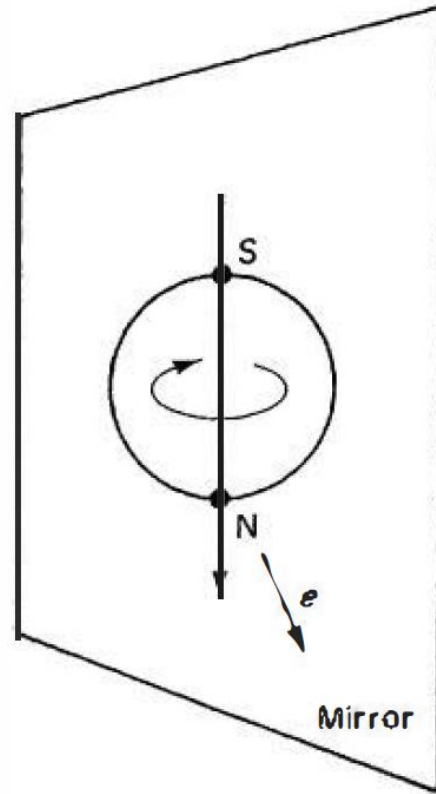
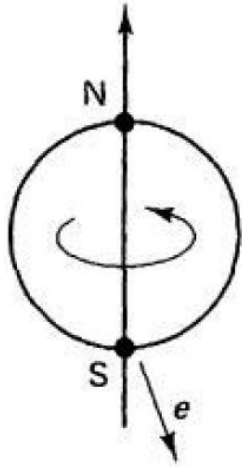


Aligned spins of  ${}^{60}\text{Co}$  and measured distribution of electrons.



# Parity violation

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Parity violation is the signature of the Weak interaction

# Parity Inversion

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$$P: \begin{pmatrix} x \\ y \\ z \end{pmatrix} \mapsto \begin{pmatrix} -x \\ -y \\ -z \end{pmatrix}$$

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