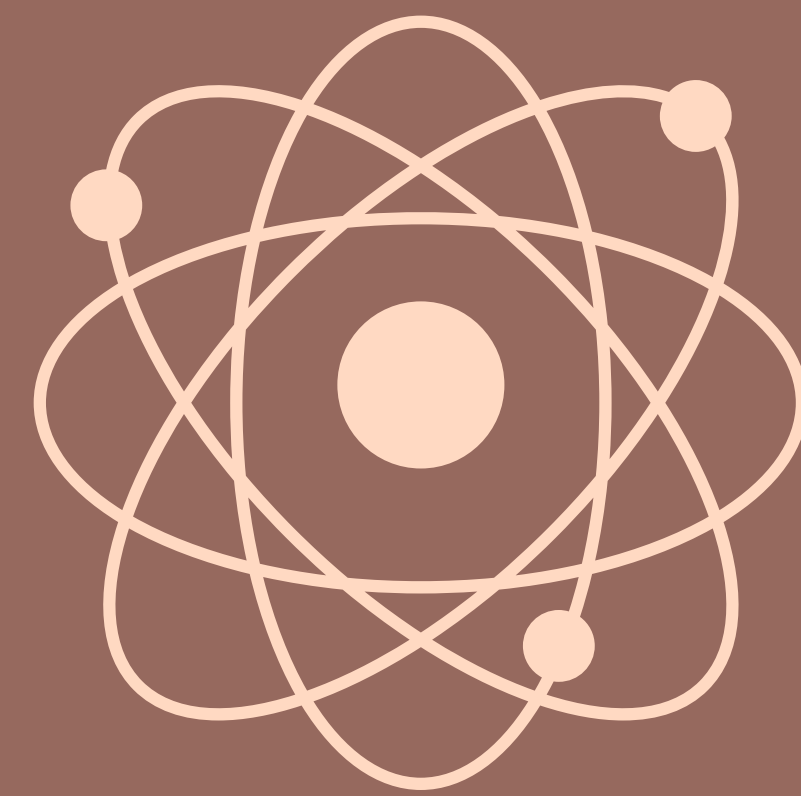


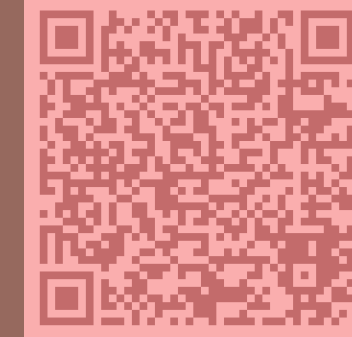
Maria Goeppert-Mayer

THE WOMAN WHO PUT NUCLEAR PHYSICS ON THE SCIENTIFIC MAP.



WHO IS SHE ?

SOURCES :

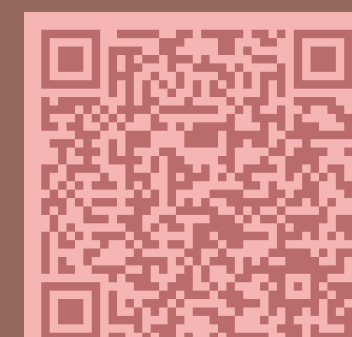


Maria Goeppert-Mayer was a theoretical physicist who left a lasting mark on nuclear physics. She is best known for developing the groundbreaking nuclear shell model, a discovery rooted in quantum mechanics that earned her the 1963 Nobel Prize in Physics, making her only the second woman in history to receive this honor, after Marie Curie.

WHAT ARE QUANTUM MECHANICS ?

Quantum mechanics is the branch of physics that explains how very tiny particles, like electrons and photons, behave.

A website to play with her discoveries :



HER SCIENTIFIC CAREER



-Education in Göttingen (1920s) :

Studied physics at a leading center of quantum mechanics; trained in theoretical physics under Max Born, a famous physicist and mathematician.

-PhD (=Doctor of Philosophy ; 1930) :

Completed a PhD in theoretical physics with a thesis on two-photon

-Move to the United States (1930) :

Emigrated after her marriage; continued research at several universities, often without pay due to discrimination against women.

-University of Chicago (1940s) :

Specialized in nuclear physics, applying quantum mechanics to the structure of the atomic nucleus.

-Shell Model Discovery (1949) :

Proposed that protons and neutrons occupy quantized energy levels, explaining magic numbers and the stability of certain nuclei.

-Nobel Prize in Physics (1963) :

Awarded the Nobel Prize for her shell model, becoming the second woman after Marie Curie to receive this honor in physics.

-Final Years in San Diego :

Taught, supervised students, and continued her research until her death in 1972.

Atoms have a nucleus made of protons and neutrons. According to the shell model theory, proposed by Maria Goeppert Mayer, these particles are arranged in energy levels, like floors in a building. When a shell is completely filled, the nucleus is more stable. The numbers of protons or neutrons that fill these shells are called magic numbers (2, 8, 20, 28, 50, 82, 126) → Nuclei with magic numbers are especially stable.

an experience to understand better :



WHAT IS THE SHELL MODEL ?