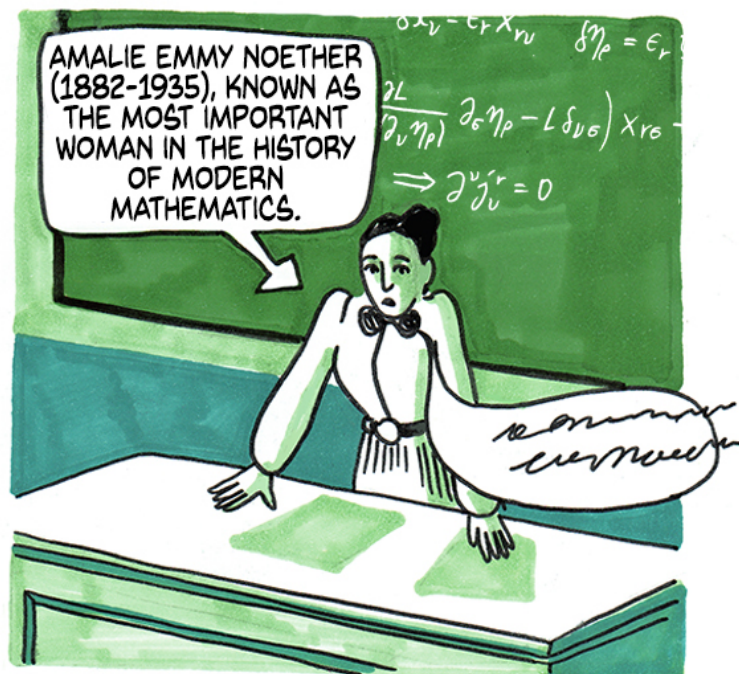


*FRAUENSTUDIUM: PRIVATE SCHOOL RUN BY GERMAN SUFFRAGETTES WITH THE AIM TO HELP WOMEN GET READY FOR THE UNIVERSITY ACCESS EXAMINATION

*FRAU: HERE IT MEANS WIFE, HOUSEWIFE, BUT ITS MAIN MEANING IS WOMAN

1924, UNIVERSITY
OF GOETTINGEN

Therefore, knowing
the continuous symmetries
of a given
system...



*THE GERMAN LANGUAGE DISTINGUISHES BETWEEN GENDERS. NEVERTHELESS, MARIA SAYS "PROFESSOR" AND NOT "PROFESSORIN" (FEMALE PROFESSOR), USING THE MALE VERSION TO REFER TO HERSELF.

DURING HER STUDIES MARIA ALSO GETS MARRIED TO JOSEPH EDWARD MAYER, AN ASSISTANT TO NOBEL PRIZE WINNER JAMES FRANCK, THEREFORE BECOMING MRS:

DISSERTATION
ÜBER ELEMENTARAKTE MIT ZU-
QUANTENSPRÜNGEN
MARIA GOEPPERT MAYER

MAX BORN
-NOBEL
1954-

JAMES
FRANCK
-NOBEL 1925-

ADOLF OTTO
REINHOLD
WINDAUS
-NOBEL
1928-

Tell us about
your PhD thesis: the
two-photon ab-
sorption process.



An electron
in an atom or a
molecule has to absorb
energy in order to get
excited and jump to the
next available state.
Normally, this happens by
absorption of a single
photon, i.e., a quantum
of light: the electron
can jump by an amount
equal to the photon
energy...



BELL TELEPHONES LABORATORIES, MURRAY
HILL, NEW JERSEY 1961

WOLFGANG
KAISER

GEOFFREY
GARRETT

However, the electron might
absorb two photons at the
same time, such that the electron
acquires an energy equal to the
sum of both photon energies...



In my dissertation
I computed the
probability of this
process, or its cross
section to be
precise.

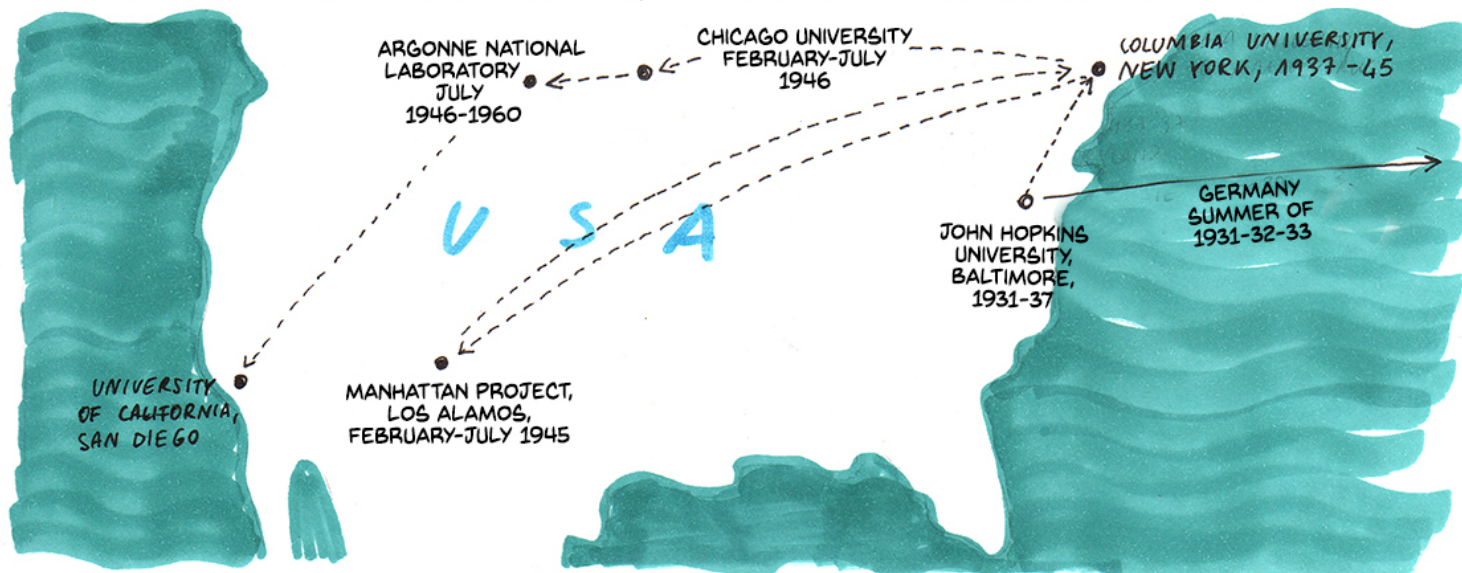
She was
right!



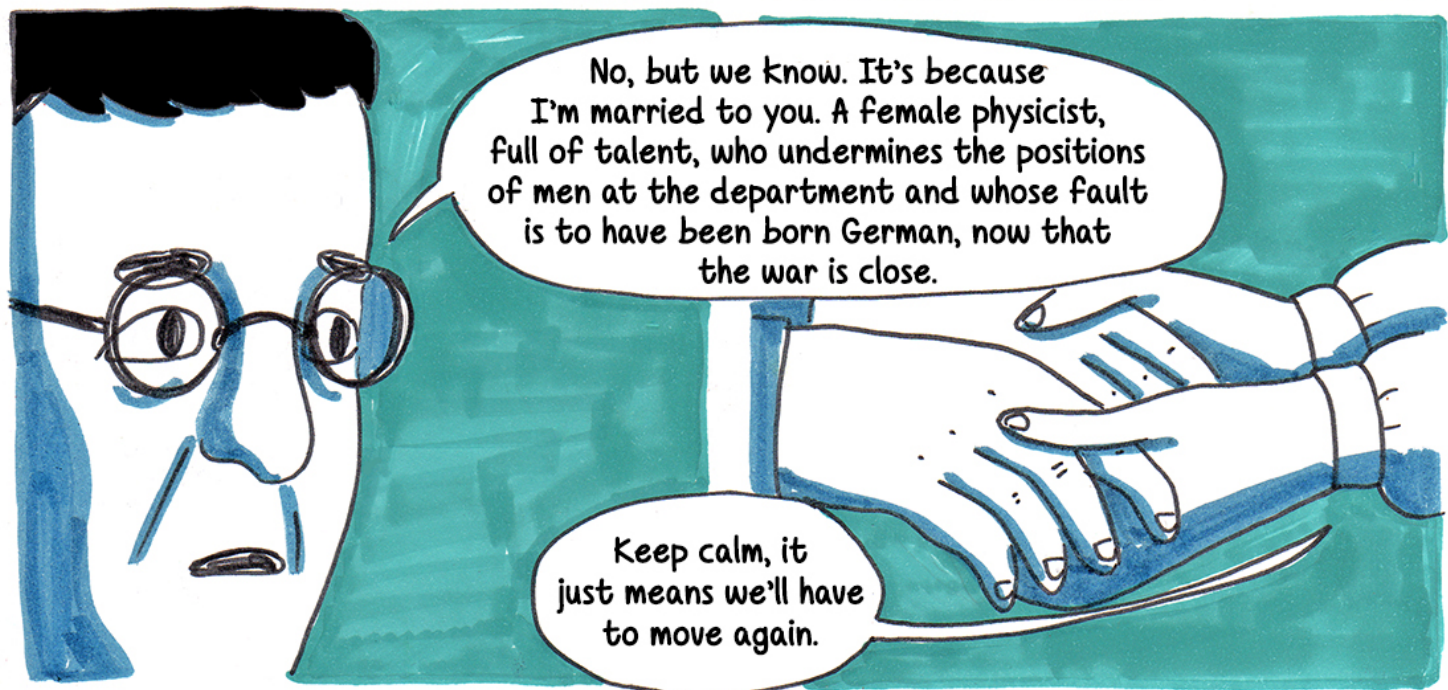
IN MARIA'S HONOR, THE UNIT OF
MEASUREMENT FOR THE CROSS
SECTION OF THIS PROCESS IS
NAMED GM (GOEPPERT-MAYER).



AFTER MOVING TO THE UNITED STATES, MARIA HAS TO RELOCATE AGAIN SEVERAL TIMES:



IN 1933, MARIA'S VISITS TO GERMANY, TO WORK WITH MAX BORN, ARE INTERRUPTED BECAUSE OF HITLER'S RISE TO POWER. MARIA COLLABORATES WITH KARL HERZFELD AND THE TWO OF THEM ARE ACTIVE IN HELPING GERMAN REFUGEES.



THE MAYERS MOVED THEN TO NEW YORK IN 1937. MARIA HAS AN UNPAID POSITION AT THE COLUMBIA UNIVERSITY THAT ALLOWS HER TO HAVE AN OFFICE. HERE, SHE BECOMES FRIENDS WITH HAROLD UREY AND ENRICO FERMI.



93
Np
Neptunio
(237,02891)

94
Pu
Plutonio
(244)

95
Am
Americio
(243)

96
Cm
Curio
(247)

97
Bk
Berkelio
(247)

FOLLOWING FERMI'S ADVICE, MARIA STUDIES TRANSURANIUM ELEMENTS (HEAVIER THAN URANIUM). SHE PREDICTS THEY HAVE TO FORM A SERIES LIKE THAT OF THE RARE EARTHS. THIS PREDICTION WILL TURN OUT TO BE TRUE, TOO.

98
Cf
Californio
(251)

99
Es
Einstenio
(252)

100
Fm
Fermio
(257)

101
Md
Mendelevio
(258)

102
No
Nobelio
(259)

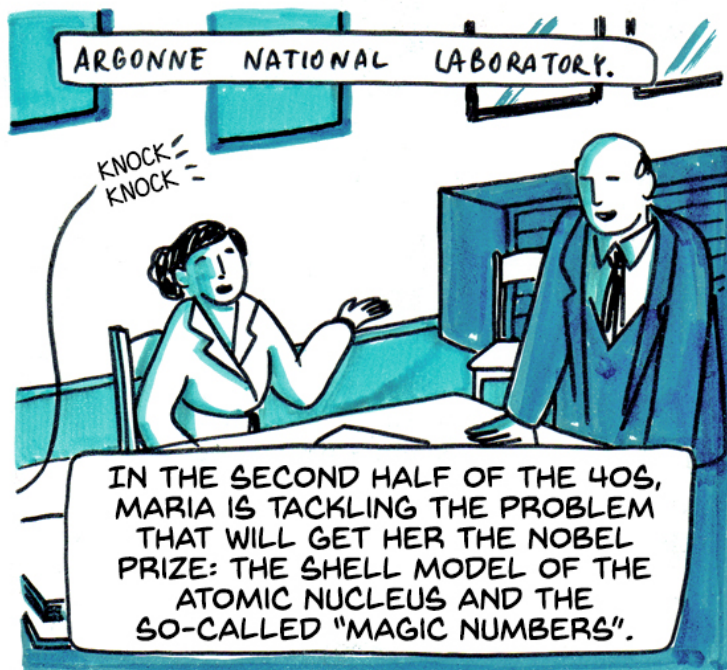
103
Lr
Laurenzio
(262)

AFTER MORE MOVES AND FRIENDSHIPS, IN JULY 1946 THE FRESHLY ESTABLISHED ARGONNE NATIONAL LABORATORY OFFERS HER A POSITION AS SENIOR PHYSICIST...



But I know nothing about nuclear physics!

...MARIA ACCEPTS THE OFFER.





I
GOT



IT!



Explain it to
me tomorrow
morning, when
you're calmer.



WE DON'T KNOW WHAT MARIA TOLD FERMİ, BUT THESE ARE HER WORDS TO EXPLAIN HER MODEL:

Think of a room full of waltzers.

Suppose they go round the room in circles, each circle enclosed within another.

Then imagine that in each circle, you can fit twice as many dancers by having one pair go clockwise and another pair go counterclockwise.

Then add one more variation; all the dancers are spinning twirling round and round like tops as they circle the room, each pair both twirling and circling.

But only some of those that go counterclockwise are twirling counterclockwise. The others are twirling clockwise while circling counterclockwise. The same is true of those that are dancing around clockwise: some twirl clockwise, others twirl counterclockwise.

THE SAN DIEGO UNION

SAN DIEGO, CALIFORNIA, MONDAY MORNING, JUNE 17, 1963

ina Takes
rd Line On
et Talks

S.D. Mother Wins Nobel Prize



THE LOCAL NEWSPAPER HEADLINES: "S.D. MOTHER WINS NOBEL PRIZE". FOR THE JOURNALISTS, MARIA IS STILL FIRST A MOTHER, THEN A SCIENTIST, EVEN AFTER WINNING THE NOBEL PRIZE.



MARIA SHARES THE PRIZE WITH EUGENE PAUL WIGNER (HALF) AND J. HANS D. JENSEN, WHO MARIA SHARES THE SECOND HALF OF THE PRIZE WITH.

OUT OF
111 NOBEL
PRIZES IN
PHYSICS, ONLY
TWO HAVE
BEEN AWARDED
TO WOMEN.



AS OF TODAY,
IT'S BEEN 54
YEARS SINCE THE
LAST WOMAN
RECEIVED
THE PRIZE.

ENGLISH TRANSLATION BY:
CLIÒ AGRAPIDIS