

Government of Israel told Japanese government that it can send a team of experts within 48 hours!



Medical team was exceptional, they had X-ray, Echo, eye and throat instruments, delivery stands, operating table, and prefabricated clinic to house them.



**HARRY LIPKIN**

**A PEDESTRIAN'S VIEW**

**A. I. SANDA**

FPCP, Ma'ale Hachamisha, Israel, May 26, 2011

**A statement by one of the speakers**

**“I am as old as  $J/\psi$ ”**

**Status of our field when Harry was born**

1919 Light bending confirmed

1922 Friedmann proposes expanding univers

1923 Stern-Gerlach experiment

1925–7 Quantum Mechaics

# When I overlapped with Harry first?

## **Verification of the Tenfold Assignment of the Baryon Resonances.**

S. Meshkov, (NIST, Wash., D.C.) , C.A. Levinson, (Weizmann Inst.) , H.J. Lipkin, (Illinois U., Urbana) . Apr 15, 1963. 3pp.

Published in **Phys.Rev.Lett.10:361-364,1963.**

I was a struggling undergrad at U of I -just finishing up my freshman year!

For my senior thesis, I did an experiment on Mössbauer effect in Fraunfelder's lab. Harry introduced Mössbauer effect to Fraufelder!

**THIS IS WHERE I FIRST MET HARRY IN 1967**

**3pm tea  
Princeton University  
Palmer Physical Laboratory**



**I WAS JUST A BEGINNING GRAD STUDENT**

**MY IMPRESSION OF HARRY AT THAT TIME**

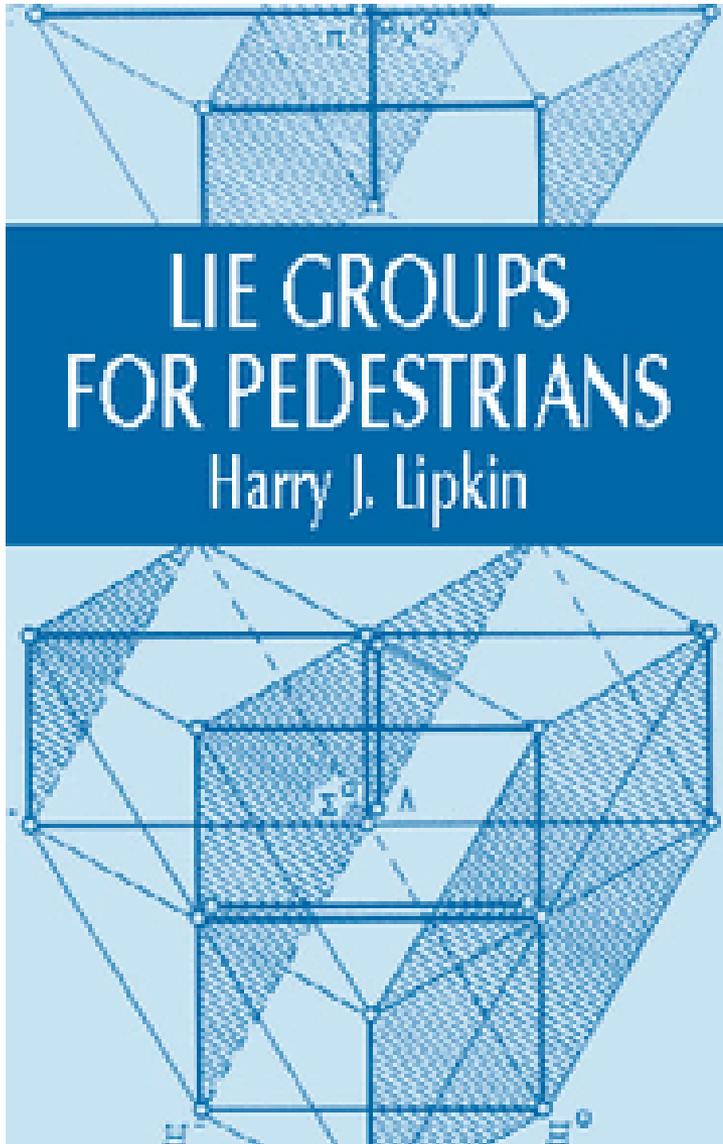
**PROFESSOR LIPKIN WAS A BIG PROFESSOR**

**WHO WROTE BOOKS ON GROUP THEORY**

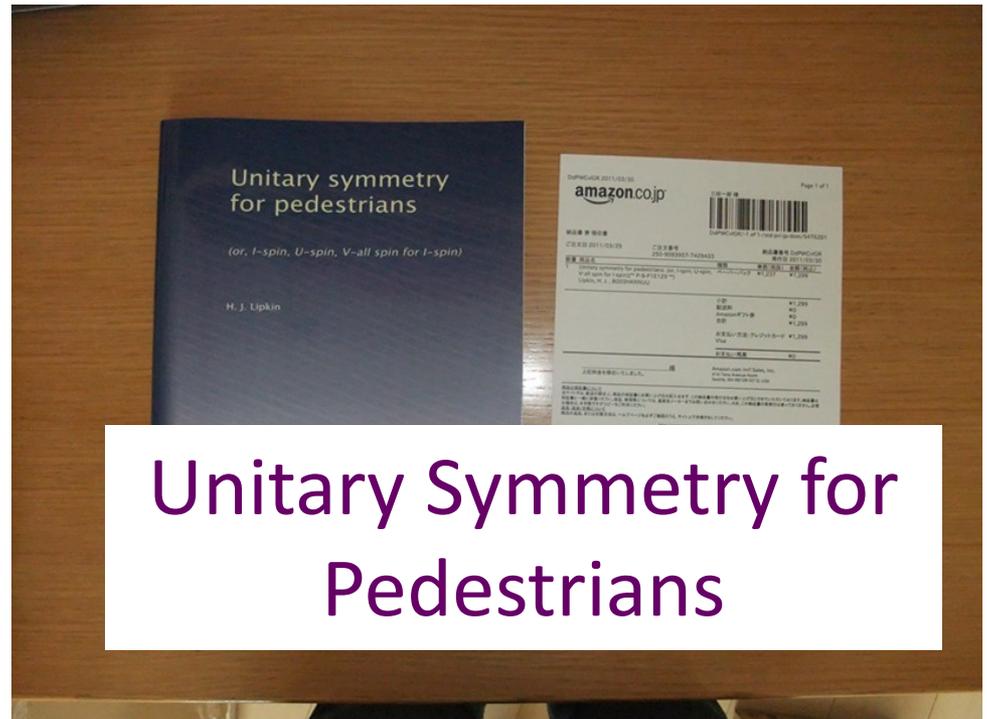
**WHICH WERE WIDELY USED BY GRADUATE**

**STUDENTS - A PEDESTRIAN LIKE ME**

Published 1965



Published 1964



## Unitary Symmetry for Pedestrians

These books are still in print after 45 years!

A key to the longevity of a book  
Don't put experimental results

# Lie Groups for Pedestrians

Many people tried to copy his style and grace.

Books were written with titles like :  
Quantum Mechanics for Dummies;  
Quantum Mechanics - Even Monkeys can Understand

Nobody came up with more elegant phrase over the next 50 years!

# Harry and Malka early years

1942

Electrical Engineering

Degree from Cornell

Radar Technology

MIT Radiation laboratory during the War

Radar receiver

Learn American way of doing research

They met when  
Harry was a  
graduate student at  
Princeton and Malka  
was at Hightstown  
getting ready to join  
Kibbutz movement



Malka and Harry in 1950, shortly before they left for Israel

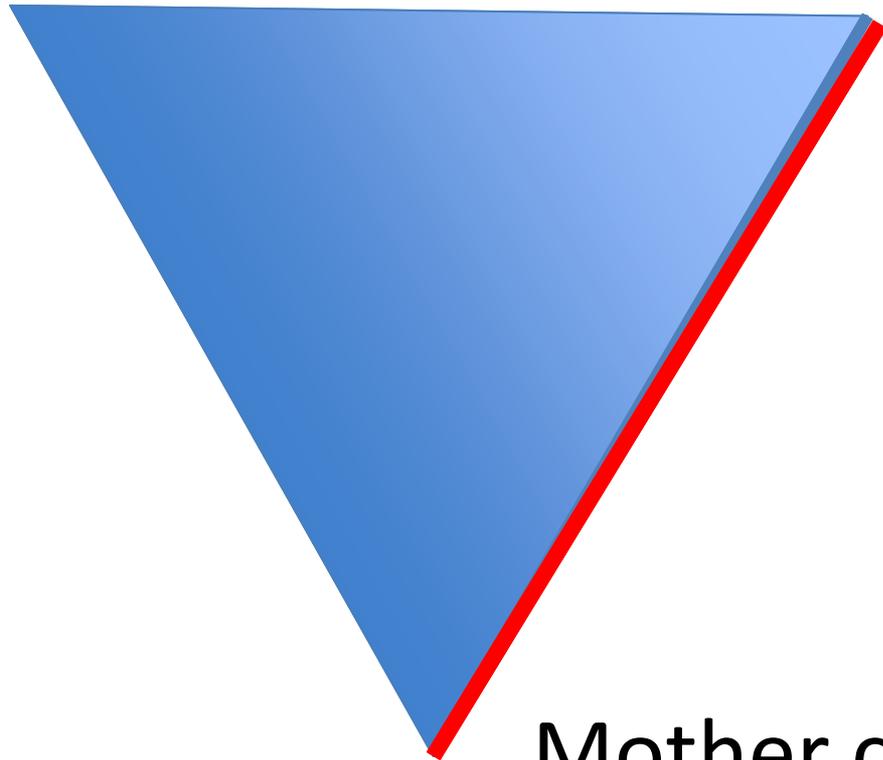
# Triplet of Love

Physics

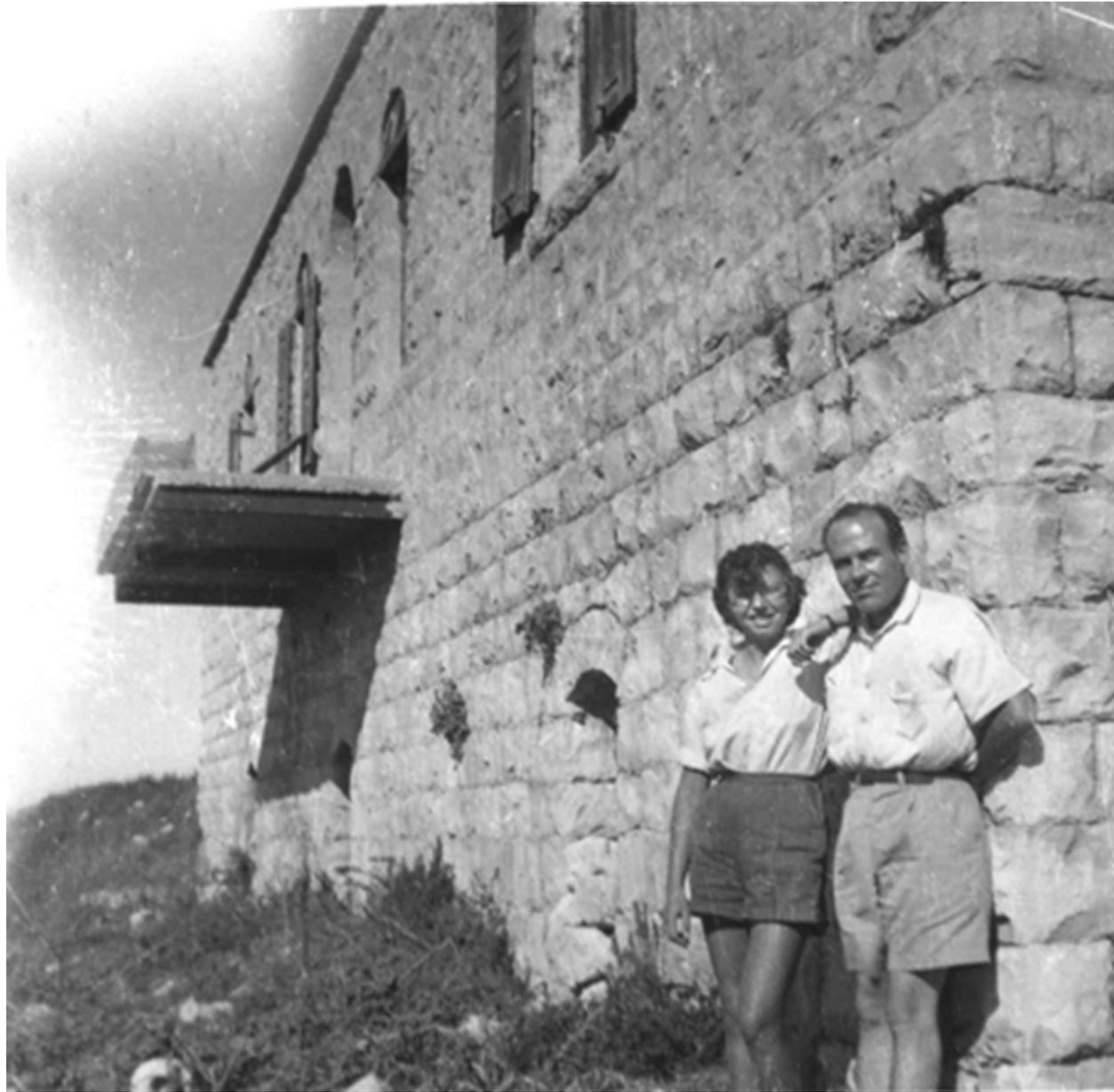
Malka

Let the fate  
take care of  
this problem

Mother country Israel



Malka and Harry at Kibbuz Sasa shortly after their arrival in 1951. Their room was in this building.



Malka and Harry were invited to visit the Weizmann Institute.



Sent to French Atomic Energy Commission in Saclay to learn about nuclear power plant.

Support the planned opening of Israel's first nuclear reactor.

1954 Returned to Israel

1955 Established the first nuclear physics  
course in Israel at Weizmann

1956 Ph.D. Princeton

# Harry's speciality

1) Nuclear Physics

2) Group theory and Unitary Symmetry

3) Symmetry, coherence and weak decays

4) Education

# 1) Nuclear Physics

As a postdoc at Saclay in 1954 learning about nuclear reactors, Harry did a calculation showing that if the French reactor at Chatillon were turned on and left alone, the temperature would rise but the effect of the increased temperature on the reaction would stabilize the reactor and it wouldn't blow up.

In a reactor using water, the rising temperature slows down the reaction (this is called a negative temperature coefficient). If the water reaches the boiling point the nuclear reaction is completely turned off.

**Probably this was varified  
In Fukushima**

## 2) Group theory and Unitary Symmetry

### HISTORY

- 1962 Goldberg and Ne'eman had premonition of the quark model
- ✓ Triplets of fractionally charged quarks
- ✓ Nonets of mesons

A wrong experiment was in their way!  
This paper was too far ahead of its time.

- 1964 Gell-Mann Zweig

- In Israel, Ne'eman the co-inventor of the Eight fold way tried to convince others to work on it.
- The first to accept the challenge was Harry.

## The rest is history!

Harry became the main evangelist of the quark model all over the world.

# 3) Symmetry, coherence and weak decays

Harry was the first to point out

$$\Phi \rightarrow K_S + K_L$$

## MY PAPERS WITH HARRY

Fermilab workshop

Isospin Invariance, CP Violation and B anti-B Mixing.

ANL-HEP-PR-87-115, DOE/ER/40325-13, Nov 1987. Published in  
Phys.Lett.B201:541,1988.

Use Of Isospin Invariance In B Decays.

ANL-HEP-CP-88-02, DOE/ER/40325-25, Jan 1988. 5pp.

Proc. of Fermilab Workshop on High Sensitivity Beauty Physics, Batavia, IL, Nov  
11-14, 1987.

## 4) Education

Malka and Harry are contributing to methods for teaching children how to read.

They can read Japanese

Mc Donald

Makudonarudo

マクドナルド

# RECIPIENT OF

1970 National Academy of Science

1973 Kaplun Prize

1980 Rothschild Prize

1983 Weizmann Prize of the City of Tel Aviv

1992 Sackler Scholarship

2002 Wigner Medal

2009 EMET Prize

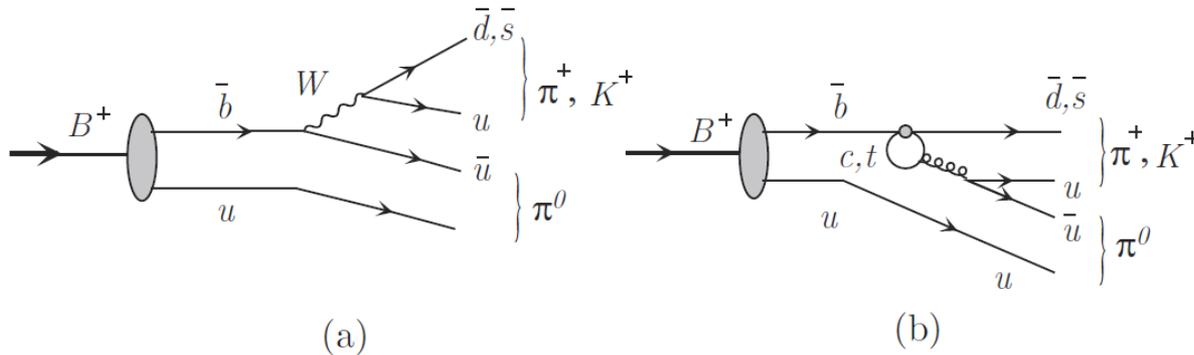
# Harry's most recent physics

New  $B^\pm \rightarrow K\pi$  data explain absence of CP violation

Tree-penguin interference canceled by Pauli effects.

Harry J. Lipkin, . Feb 2011. Temporary entry

e-Print: arXiv:1102.4700 [hep-ph]



According to Harry:

Final state has two u quark! Pauli exclusion principle has not been explicitly put in!

**I am astonished to find out that he is 90!?**

**Mishima**





In the fall of 2006 there was a meeting in Kyoto. My wife and I asked Prof. Lipkin and his wife to join us for a walk from Yukawa Institute – Yoshida yama- sinnyodo- philosopher's path. At the time I was not aware that Prof. Lipkin was already over 85. But they were full of energy and always smiling-fully enjoying the foriage. Thinking back, I feel that I should have been more considerate.

**YKIS 2006**

A. Hosaka



# AKIRA MASAIKE

EMERITUS PROFESSOR KYOTO UNIVERSITY

About 40 years ago, I was having supper at Sacyl with a young man from Weizman Institute. He was talking about Professor Lipkin's passion for Israel, physics, and education.

He has dignity of an ancient samurai – like a old fashion giant professor with conviction.

He accepted my invitation to give a summary talk at Intersection between Particle and Nuclei, High Energy Spin Physics – PANIC(1987). I was stunned by his diligent approach - working on his talk until the very end.

He was almost always accompanied by his wife. My wife has always been deeply impressed by their kindness and thoughtfulness.



# Harry and Sakharov



With Andre Sakharov (1921-1987) on their way to Pugwash meeting – diffuse the tension of nuclear test ban



Migdal's back.

Harry played an important role  
in getting getting Sakharov out!

☾ □ ○ ♎      ♁ ◆ ■  
□ ♃ ♎ ◆ ◆ □ ♎ ◆



Malka and Harry at Harry's 50<sup>th</sup> birthday party

# The 10th International Symposium on High Energy Spin Physics (Nagoya Nov.9-14, 1992)





# TRIP TO TSUMAGOME





At a conference in Blois. 1999

# BEAUTY-2000, Maagan, Israel, September, 2000 Ginosar



# B physics and CP violation

Ise-Shima 2001,



# 2001 ISE



# ISE 2001



International conference on the structure of baryons

# BARYONS'10

Dec. 7-11, 2010, Osaka, Japan



Giving a toast at the banquet

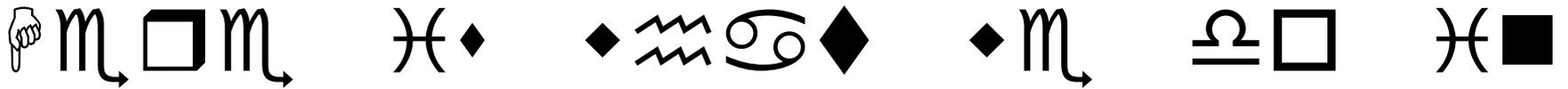


BARYONS'10 Dec. 2010

Photo supplied by Hosaka Osaka Univ.

De Shalit, Lipkin, Ne'eman and Talmi are founding fathers of nuclear and particle physics in Israel.

It is important to preserve their spirits towards research-implant them in to young researchers.



Nishina is the founding father of nuclear physics in Japan.

We honor Nishina by awarding Nishina prize. The award ceremony is always held on his birthday December 6.

## Summary

How can we do physics for ever?  
What I have learned about Harry



- You must have curiosity about nature.
- Ground design



- Patience and perseverance - be good at finding a partial solution.



- It's a group effort – erase age issue out of your mind – always treat young people as your colleague.



- Have a wife like Malka.

**Congratulations Harry!**

**For your 90<sup>th</sup> birthday!**

**Also**

**Congratulaions Malka!**