



The Abdus Salam
International Centre
for Theoretical Physics
Physics Without Frontiers



Grasping at Straws: Cosmology, HEP and Medical Physics in the Kurdistan Region In Iraq

Mr. Muhsin Aljaf
University Of Garmian

*Celebrating 10 Years of Physics
Without Frontiers*

22th November 2022



Grasping at Straws: Trying to find a way to make things work in a hopeless situation!

Introduction

- Iraqi Kurdistan is an autonomous region Northern Iraq.
- **Around 12 Private and 15 Public Universities**



Duhok



Sulaimani



Erbil



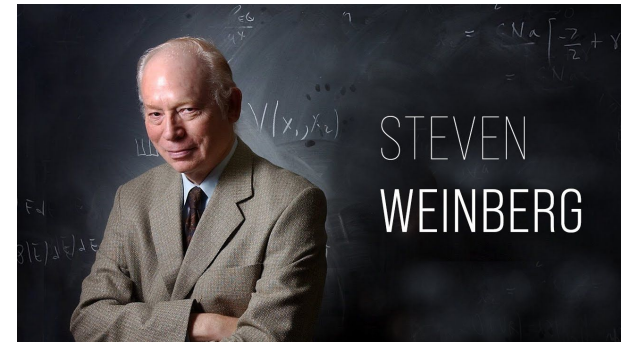
Motivation

- Large number of physics enthusiasts
- Higher education in Kurdistan generally after at a bachelor's degree.
- Very few expert researchers in fundamental physics.
- Most student don't know even it is possible to purse a degree

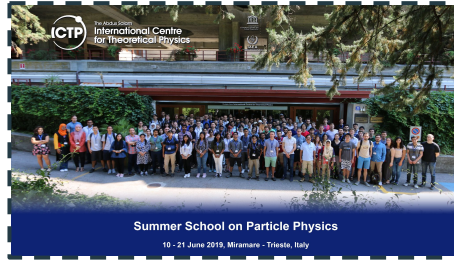


" Dear Muhsin,

Work in particle physics and cosmology can be either theoretical or experimental. Experimental work has to be done at leading centers for this work, which do not exist in Iraq. Theoretical work is possible anywhere, but governments in developing countries are unlikely to provide salaries for theorists working in particle physics or cosmology, which have no immediate practical applications. For purposes of seeking a career, if you plan to stay in Iraq you might do better to do theoretical work in a field like condensed matter physics, but I really don't know anything about the possibilities in Iraq. If you can, you should seek advice from someone who understands the possibilities in Iraq. Good luck, **Steven Weinberg**"



The Beginning



June 2019 Summer School on Particle Physics



Mr Baktahs Amini
Afghanistan PWF coordinator

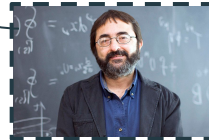


Fernando Quevedo
ICTP director



Kate Saw
PWF coordinator

*We will put Kurdistan region in our priority.
Email Kate!*





2019 Summer School on Particle Physics & Cosmology

- Participants: 60 students and staff members.
- Goal: A brive intro to Particle physics phenomenology and cosmology including General relativity.
- We had session QA and a one for Computational problems, some part time!
- Plan: Multiple full lectures about basics of particle physics and a Live session from ATLAS



PHYSICS WITHOUT FRONTIERS: KURDISTAN REGION OF IRAQ

School on High Energy Physics and Cosmology

26-28 November 2019
University of Sulaimani

indico.ictp.it/event/9185

SPEAKERS:
Kate Shaw ICTP and University of Sussex
Hiva Ahmed Central South University
Muhsein Burhan University of Science and Technology of China
Daniela Gregora Yangzhou University

LOCAL COORDINATION:
Muhsein Burhan ICTP PWF Coordinator for Kurdistan Region
Nzar Rauf University of Sulaimani

045 16-935-
Deadline: November 18
<http://bit.ly/5f9f0a>



2019 Team

1. Daniele Gregoirs(Jiangsu University of Science and Technology)
2. Danyal Abdulawahhab(**University of Sulaimani- Currently study abroad in China**)
3. Akam Mohammed Omer(**University of Sulaimani- Currently study abroad in China**)
4. Hiwa abubakar (University of Sulaimani)
5. Arman khalil (University of Sulaimani)
6. Nzar Rauf (University of Sulaimani)
7. Muhsin Aljaf(University of Garmian)



September 2021: 2nd Summer School on Particle Physics and Cosmology (Hybrid)

Around 50 participants



زانكۆی سه لاهه دین - ههولێر
Salahaddin University-Erbil



Master class



Meeting with Sean Carroll

PHYSICS WITHOUT FRONTIERS: KURDISTAN REGION OF IRAQ SECOND SUMMER SCHOOL ON PARTICLE PHYSICS AND COSMOLOGY

📍 Salahaddin University - Erbil
📅 13 to 16th September 2021

SPEAKERS

Sean Carroll	California Institute of Technology (Caltech)
Emmanuel Sairdakis	National Observatory of Athens
Yi-Fu Cai	University of Science and Technology of China
Lavinia Helsenberg	ETH Zurich
Kate Shaw	ICTP and University of Sussex
Andrea Negri	University of Pavia
Muhsin Al-Jaf	University of Garmian
Hiwa Ahmed	Charmo University
Adam Abed Abud	CERN and University of Liverpool

PROJECT COORDINATORS

Muhsin Al-Jaf	University of Garmian
Hiwa Ahmed	Charmo University

LOCAL COORDINATORS

Amir A. Ahmad	University of Salahaddin - Erbil
Arman Al-Jaf	University of Sulaimani
Mustafa Said Omar	University of Salahaddin - Erbil
Isam Khalil	University of Salahaddin - Erbil
Mohamad Isa	University of Salahaddin - Erbil
Bolan Jawdat	University of Salahaddin - Erbil

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SCAN TO
REGISTER:
ERBIL
16/AUGUST/2021



2022 team

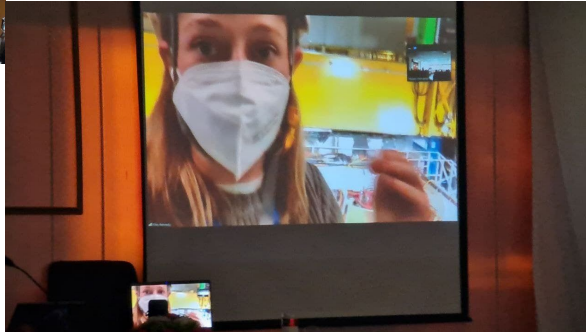
1. Amir Adduraham (University of Salahaddin)
2. Andam Ali Mustafa (University of Salahaddin)
3. Basood Rasul (University of Salahaddin)
4. Muhsin Aljaf (University of Garmian)
5. Daban Zhyan (University of Salahaddin)
6. Rasty Salam (University of Sulaimani)
7. Pala Said (University of Sulaimani)
8. Hiwa Abubakar (University of Charmu)
9. Arman khalil (University of Sulaimani)
10. Sanar Samad (University of Salahaddin)
11. Adam Adam Abed (CERN)



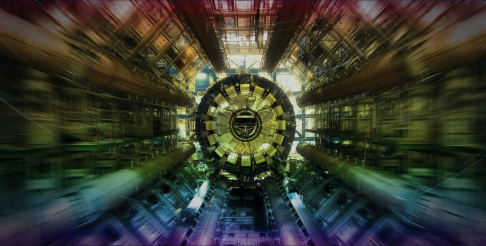
February 2022: Workshop on Large Hadron Collider



- Around participants: 30 students and faculty members
Goal: What is going in LHC and why it is important?
- Two full lectures about basics of particle physics and a Live session from ATLAS
- The team: Hossain Mehranfar (Garmian University), Jamil Enayati, and Kate Shaw, and Muhsin Aljaf




Physics Without Frontiers:
Workshop on
L H C
Large Hadron Collider



SPEAKERS
Hossain Mehranfar, University of Garmian
Kate Shaw, ICTP & University of Sussex
Kiley Kennedy, Columbia University & CERN

ORGANIZERS
Muhsin Aljaf, University of Garmian
Jamil Enayati, University of Garmian
Kate Shaw, ICTP & University of Sussex

SPACETIME
22/02/2022 • 10:00 am
The Salah Kwekha Hall, Department of Physics,
College of Education, University of Garmian



November 2022: KURDISTAN-IRAQ NUCLEAR MEDICINE: WHERE THE FUTURE BRINGS US [Ongoing!].



Charmo University

بەرزۆمبەزێتی راگەیاندن

زانکۆی چەرموو



Charmo University

بەرزۆمبەزێتی راگەیاندن

زانکۆی چەرموو

<https://indico.ictp.it/event/10107/>

PROJECT COORDINATOR
HIWA A. AHMED
 Particle Phenomenology, PWF volunteer, Charmo University

ICTP PHYSICS WITHOUT FRONTIERS: KURDISTAN-IRAQ NUCLEAR MEDICINE: WHERE THE FUTURE BRINGS US

20th NOVEMBER to 23rd NOVEMBER 2022
 DEPARTEMENT OF MEDICAL PHYSICS, COLLEGE OF MEDICALS AND APPLIED SCIENCES, CHARMO UNIVERSITY

LOCAL COORDINATOR		HASTYAR OMAR MOHAMMED Astroparticle Physics, Charmo University	
PESHWAZ ABDULKAREEM ABDOUL Head of the medical physics department, Plasma Physics, Charmo University			
SPEAKERS			
IN PERSON			
SCONELLI FABRIZIO PhD, Head of Radiotherapy, Carrozzeria Emergency Hospital - Catania, Italy	ABUBAKER FARIESK Physicist PhD, Lecturer, College of Education, University of Sulaimani, Iraq	FAVETTA MARCO PhD Medical Physics, Biophysics Institute, Pediatric Hospital - Bari, Italy	MASPERO MARCO Radiochemists National Council of Research, PhD, San Raffaele Hospital - Milan, Italy
VIRTUAL			
IETTO FRANCESCO Nuclear Medicine Practitioner, Professor Health Hospital - Catania, Italy	CARAMMA SEBASTIANO Nuclear Medicine Technicians, Geriatric Hospital - Catania, Italy	FOSTO MATTIA Nuclear Medicine Technicians, Geriatric Hospital - Catania, Italy	POMETTI MARCO Radiochemist PhD, Carrozzeria Emergency Hospital - Catania, Italy
		PSICCIATA PIETRO Medical Physicist, PhD, UNC Giorgio Gaslini - Turin, Italy	



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Physics Without Frontiers



CHARMO



GIUSEPPE GASLINI
HOSPITAL



International speakers speakers so far...



Lavinia Heisenberg (ETH)



Yifu Cai(USTC)



**Sean
Carroll(Caltech)**



**Emmanuel Saridakis
(National Observatory of
Athens)**

Impact and feedback



- brought people together who share the same dream!
- Exposed students to cutting edge physics.
- Motivated and supported students to go for HE.
- **A number of the participants are now studying abroad or at least applying...**



Some quotes from students

it was a good motivation for going forward of being a physicist in future, that's why after year of that day's of summer school I am studying MSc in gravity and cosmology now, hopefully being one of the physicist like them. **Nawshirwan Mustafa (participant)**

It encouraged me to concentrate on studying physics more, and gave me hopes and dreams of becoming a scientist myself. **Daban Zhyan (participant)**

I learned how the LHC is used to find the smallest particles in the universe! **Mohammed Aziz (participant)**

It allowed me to meet other students whose only goal is science and learning. It was a scientific joy that in many years of university studies, I didn't experienced **Rezhna Qader (participant)**

Future

- Expanding our PWF network as much as possible, i.e finding more volunteers.
- Planning for more events annually, not just in HEP and cosmology but other science fields as well.
- PWF is open to all those who want to participant. This is our goal.

