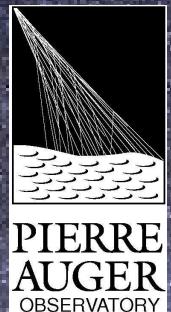




ISAPP School 2019 at the Pierre Auger Observatory



THANKS!

Cosmic Ray Vision from the Southern Sky

Malargue, March 1-9 2019

Lorenzo Perrone
for the Organizing committee

The Agenda in one shot

FORMAT

- Lectures with exercises
AND
- Seminars on specific items
- Public lecture (3/3)
- Poster Session (5/3)

SIDE ACTIVITIES

- Interaction with the Observatory staff
- Excursion and night sky observation (6/3)
- Visit to the field (7/3)
- Participating to a FD shift (7/3)
- Hands-on session (9/3)

FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7	8	9
ISAPP@Malargue, 9am	ISAPP@Malargue, 9am							

Lectures

Detection Techniques: Gamma 9 – 11am	Acceleration/Sources 9 – 10am	Propagation 9 – 10am	Propagation 9 – 10am	Air Showers Physics 9 – 10am	Detection Techniques: EAS 9 – 11am	Radio Detection technique 9 – 11am	Cosmic Rays Data Analysis: introduction 9 – 11am
Coffee Break, 11am	Exercises 10 – 11am	Exercises 10 – 11am	Exercises 10 – 11am	Exercises 10 – 11am	Coffee Break, 11am	Coffee Break, 11am	Coffee Break, 11am
Registration 11:30am – 1:30pm	Detection Techniques: Neutrinos 11:30am – 1:30pm	Multi-Messenger 11:30am – 1:30pm	Acceleration/Sources 11:30am – 12:30pm	Hadronic Interactions 11:30am – 12:30pm	Excursion (Asado at Pincheira) and star watching at night 11:30am – 11:30pm	Multi-Messenger 11:30am – 1:30pm	Cosmic Rays Data Analysis: tools 11:30am – 1:30pm

Seminars

Welcome and Introduction: The LOC and the Pierre Auger Observatory Staff 3:30 – 6:30pm	Seminar: ANDES 3:30 – 5pm	Seminar: CTA /Fermi 3:30 – 5pm	Seminar: High Energy Astrophysics and Black Holes 3:30 – 5pm	Poster Session: Round Table and Discussion 3:30 – 5pm	Visito to FD Coihueco and the field (Infill/AERA/Prime) 2 – 7pm	UHECR open questions and perspectives 3:30 – 5pm	Cosmic Rays Data Analysis: practical applications 3:30 – 5pm
Welcome and Introduction: Welcome reception at the Observatory 6:30 – 8:30pm	Coffee Break, 5pm	Coffee Break, 5pm	Coffee Break, 5pm	Coffee Break, 5pm	AUGER day	Coffee Break, 5pm	Coffee Break, 5pm
	Seminar: IceCube 5:30 – 7pm	Seminar: HAWC 5:30 – 7pm	Seminar: LIGO/Virgo 5:30 – 7pm	Poster Session 5:30 – 7pm	Poster awards. Talk for the best posters. 5:30 – 7pm	Poster awards. Talk for the best posters. 5:30 – 7pm	Cosmic Rays Data Analysis: practical applications 5:30 – 7pm

Public lecture

Public Lecture in Spanish
9:30 – 10:30pm

Meeting the Observatory

Poster session

Excursion

Poster awards

FD shift experience
9 – 11:30pm

School Time

Convention and Exhibition Center Thesaurus



Red Room: seminars and public lecture

Yellow room: lectures





Public lecture on Sun March 3 9:30 pm

Prof. Miguel Mostafa

Penn State University

USA

We had more than 70
persons and questions for
almost 1 hour !

Las partículas más energéticas del universo

¡Las partículas conocidas como rayos cósmicos nos bombardean constantemente! Uno de los mayores misterios en astrofísica es el origen de los rayos cósmicos de más alta energía en el universo. Estos rayos cósmicos son los que detectamos con el Observatorio Pierre Auger. Son extremadamente exóticos (¡e interesantes!) porque cada uno de ellos tiene una energía que es millones de veces más alta que la energía de las partículas aceleradas por el Gran Colisionador de Hadrones, el acelerador de partículas más poderoso del mundo. En esta charla entre amigos vamos a discutir una pregunta muy importante que se hacen todos los habitantes de Malargüe. ¿Qué hacen los científicos del Pierre Auger? Y más importante aún, ¿para qué sirve todo esto?

Excursion at Castillo de Pincheira



Side activities and challenging competitions

Night sky observation successful despite few clouds!

Visit to the field on Thu March 7th



Fluorescence detector
(Coihueco and HEAT Building)

Great and deepest thanks to
Mariano del Rio and Ricardo Sato

Visit to the FD site at Coihueco



Visit to the SD and SSD site in the
field close to “El Sosneado”

Participation in the night shift on Thu March 7th

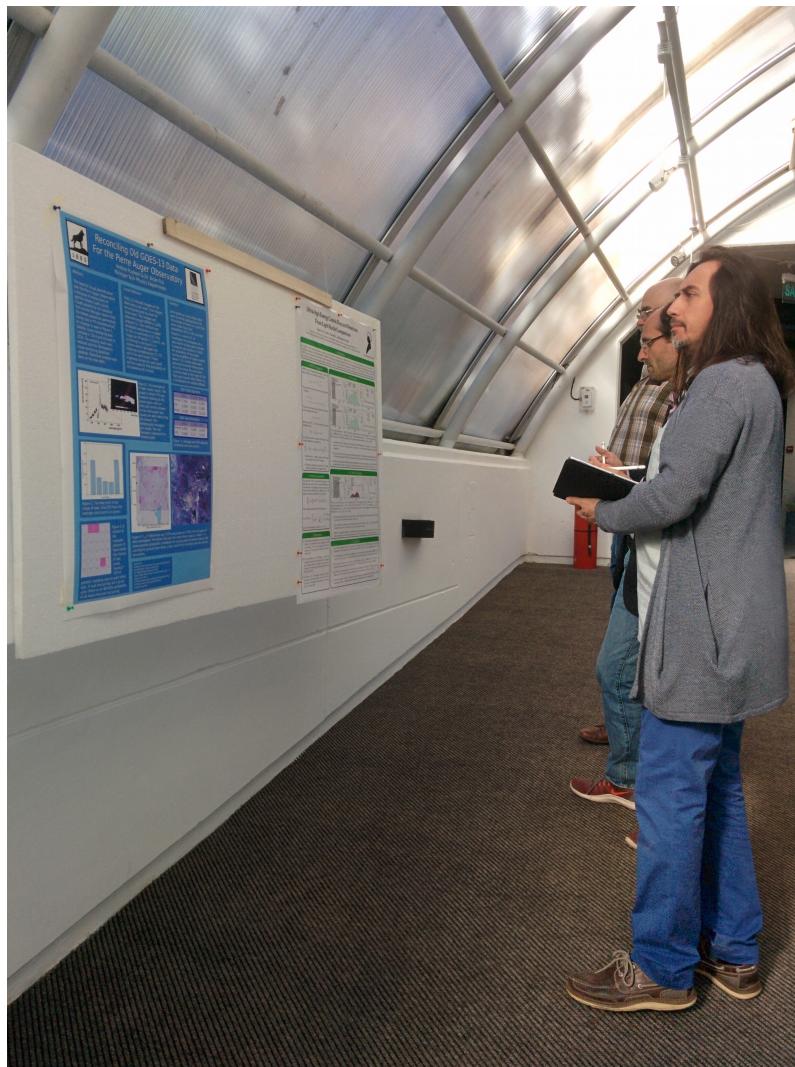
Late evening of March 7th at the end of the “Auger Day”, attending the FD shift



Poster session

Extremely productive and valuable

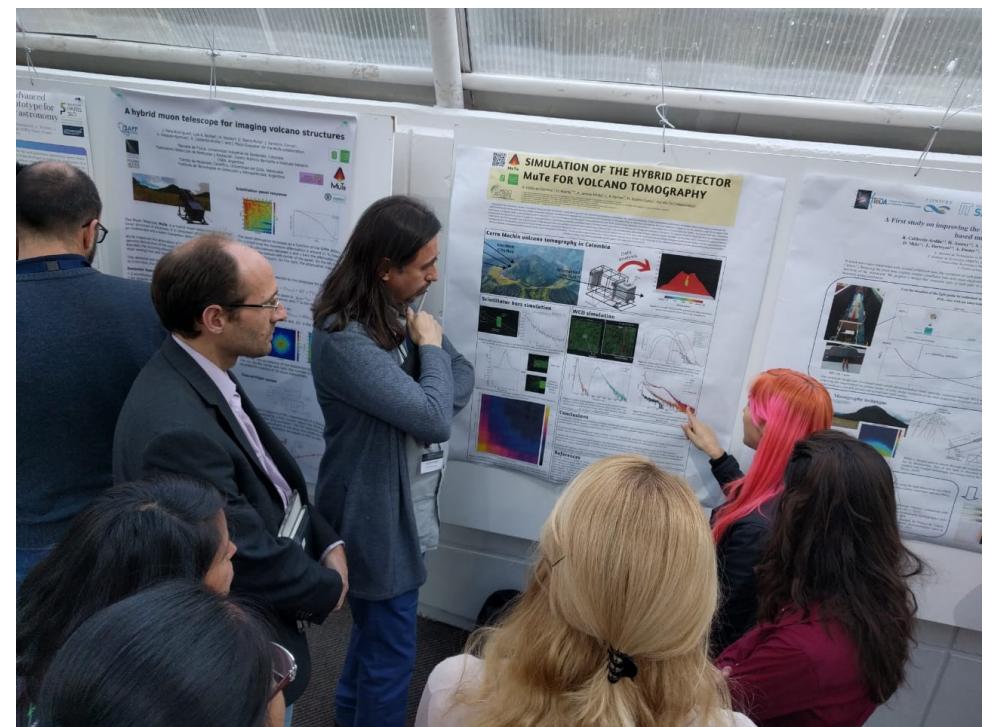
- Well and long attended
- Prepared and motivated presenters
- Fruitful interactions among students!



Fully committed Poster Panel

Thanks Xavier, Miguel, Paolo, Lukas, Ingo and Kohtha for your dedication to this task.

Really hard task for the Panel to make a choice for the poster award



School Pictures

<https://snork.nucleares.unam.mx/owncloud/apps/gallery/s/fTKTJWzWOL3j2gB#photos>



Thanks Lukas !!

Acknowledgements

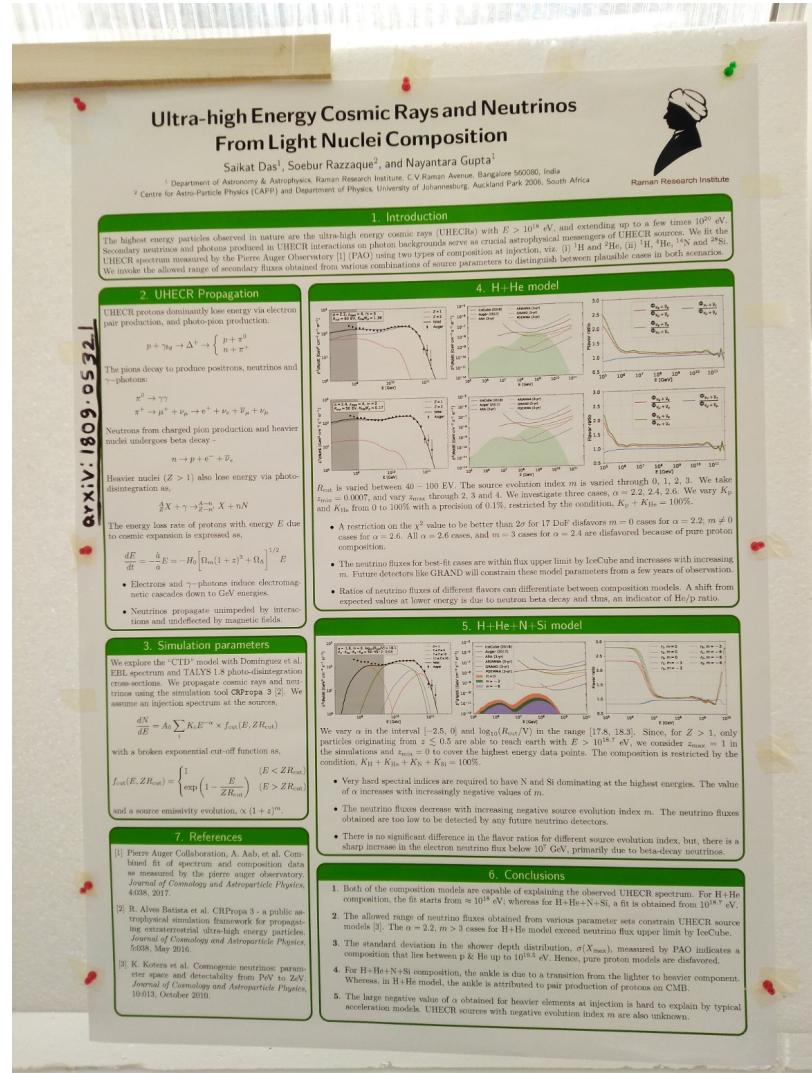
- ISAPP Network
- All the contributing Countries
- All speakers and collaborators that accepted to contribute to this experience.
- INFN Lecce for providing the support of one person in situ (Lucia Sideli)
- The Pierre Auger Observatory:
in particular, **Ingo Allekotte, Gualberto Avila, Rosa Pacheco**
- The Thesaurus convention center

Viviana for her invaluable work as organizer and for much more.

THANK YOU FOR PARTICIPATING IN THIS INITIATIVE

Poster award

Poster award: Theoretical section



Poster title

“Ultra-high energy cosmic rays and neutrinos from light nuclei composition”

Saikat DAS
Raman Research Institute
Bengaluru , India

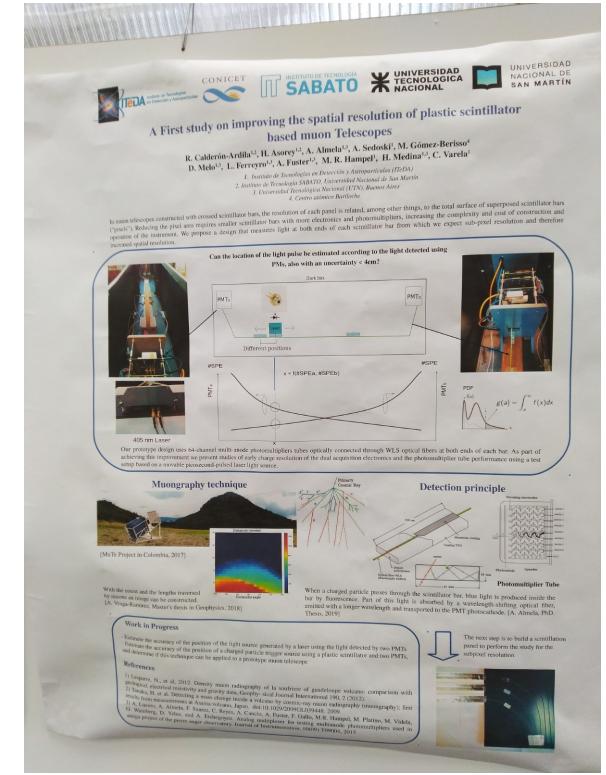
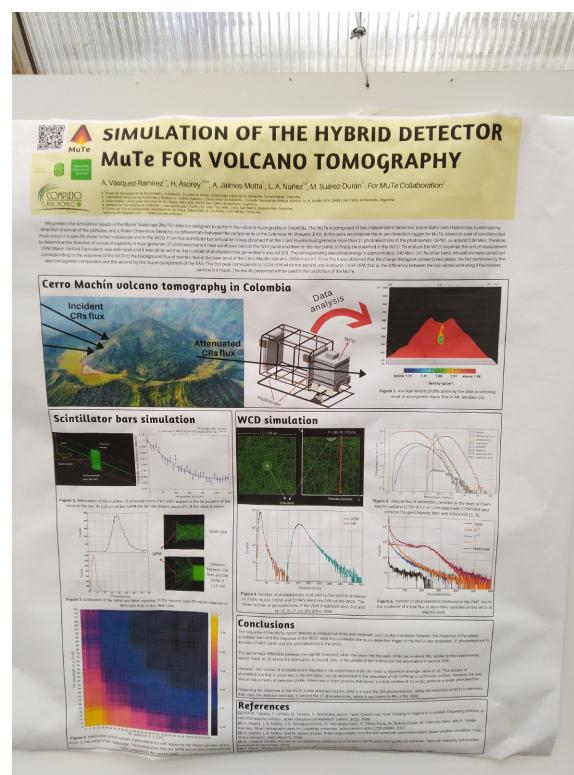
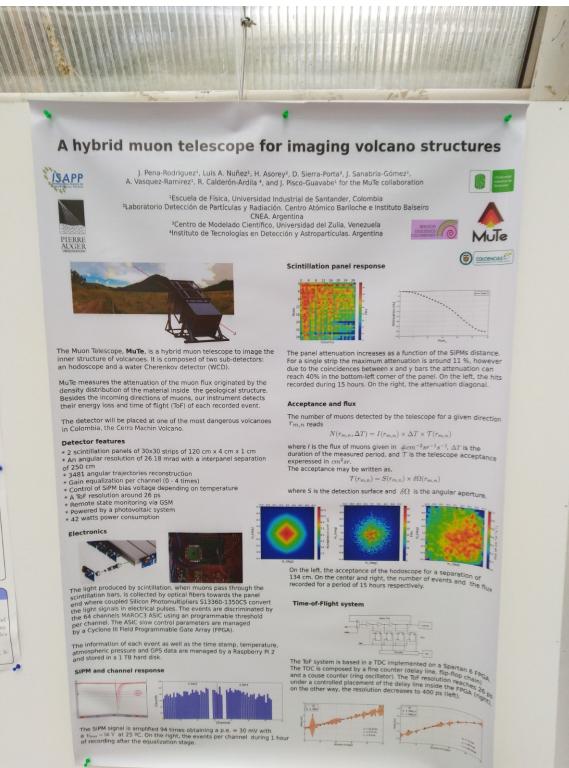
Poster award: experimental section

MuTe project presented in the following contributions:

"A hybrid muon telescope for imaging volcanos structure"

"Simulation of the hybrid detector MuTe for volcano tomography"

"A First study on improving the spatial resolution of plastic scintillator based muon Telescopes"



Jesús PEÑA RODRÍGUEZ,
Universidad Industrial de
Santander
Bucaramanga Colombia

Adriana VÁSQUEZ RAMÍREZ,
Universidad Industrial de
Santander
Bucaramanga Colombia

Rolando CALDERÓN ARDILA
Instituto de Tecnologías en
Detección y Astropartículas
Buenos Aires Argentina