



The ALICE-ICN group of the National Autonomous University of Mexico invites high school students to participate in the 3rd International Masterclass on Particle Therapy.

The Particle Therapy Masterclass demonstrates the direct impact of fundamental research on medical applications. This Masterclass Project allows participants to familiarise with the actual operation technique used for cancer treatment employing x-rays, protons or carbon ions like a physical knife directed by software programs.

The Particle Therapy Masterclass is integrated in the International Physics Masterclasses, a well-established outreach educational activity and flagship project of the International Particle Physics Outreach Group, IPPOG, spread around the world. The IPPOG collaboration comprises 6 experiments and CERN as an international laboratory. Each year more than 13000 students from more than 60 countries come to one of about 225 nearby universities or research centres for one day in order to unravel the mysteries of particle physics and its applications. At the end of each day, like in an international research collaboration, the participants join in a video conference for discussion and combination of their results.

**This year, the event will be in an online-only format.**

Dates: February 10-11, 2022

Webpage: <https://indico.nucleares.unam.mx/event/1834/>

Registration: The registration is now open!

<https://indico.nucleares.unam.mx/event/1834/registration/register#/register>

Contact:

Antonio Ortiz (aortizve@cern.ch /antonio.ortiz@nucleares.unam.mx)

----- **PROGRAM** -----

**February 10, 2022**

**9:00-9:20 h**

Opening session

Dra. Ma. del Pilar Carreón, Dra. Ma. Del Carmen Ortega, Dr. Guy Paic, Dr. Antonio Ortiz

Moderadora: Viridiana Badillo

**9:20-9:30 h**

Group photo

**9:30 - 10:30 h**

The Cosmic recipe

Dr. Alberto Güijosa (ICN, UNAM)

**10:30 - 11:30 h**

Detectors and accelerators Dr. Antonio Ortiz (ICN, UNAM)

**11:30 - 12:00 h** BREAK

**12:00 - 13:00h**

Biological effects of radiation Dr. Guy Paic (ICN, UNAM)

**13:00-13:30 h**

Application of physics in medicine M.C. Victor Lara (Instituto de Cardiología)

**13:30-14:00 h**

Experiencia clínica de los físicos en la lucha contra el cáncer (TBC)

**14:00 - 15:00 h** BREAK

**15:00-19:00 h**

Hands on session (Particle Therapy MasterClass)

Viridiana Badillo (FI, UNAM)

**February 11, 2022**

Videoconference

The results will be discussed with students from: GSI (Darmstadt, Germany), University of Sofia (Sofia, Bulgaria), Egypt University (Egypt), University of Pavia (Italy), UNSA (Sarajevo), Vilnius University (Lithuania) and Kaunas Uni. of Technology (Kaunas, Lithuania)