

PARTICLE THERAPY MASTERCLASS



About the Particle Therapy MasterClass, PTMC

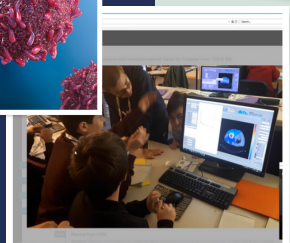
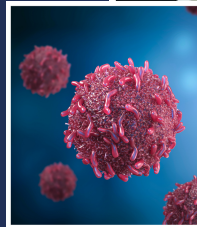
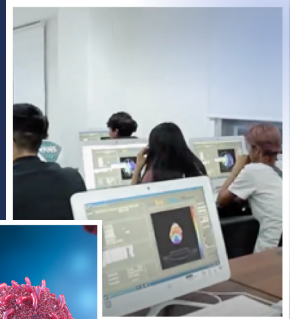
- The PTMC aims at highlighting applications of fundamental research for cancer tumour treatment and, also, at making students aware of career paths in interesting upcoming fields. It was developed in 2019 by GSI, DKFZ and CERN, and it is coordinated and moderated by GSI. It is integrated into the International Physics MasterClasses (IMC) programme, an educational outreach activity and flagship project of the International Particle Physics Outreach Group (IPPOG).

Practical Experience and Learning Opportunities

- Every year, starting on the 11 of February celebrating the International Day of Women in Science, the PTMC invites high-school students to a university or research laboratory for a day to immerse in the world of science. After introductory lectures on the role of physics in medical applications, a hands-on session allows them to experience actual radiation techniques employed for the treatment of cancer tumours using x-rays, protons, or carbon ions.

Global Reach and Impact

- The IMC project reaches out globally annually to about 15 000 high-school students from 55 participating countries and 225 institutes. Since its establishment, in 2019, the PTMC has spread worldwide, attracting some 1500 students every year. In 2023, it included 9 full-day sessions and was performed in 37 institutes from 20 countries, in person or hybrid.



FURTHER INFO

[HTTPS://INDICO.CERN.CH/E/PTMC](https://indico.cern.ch/e/ptmc)



In the framework of the
IPPOG International
Masterclasses, IMC



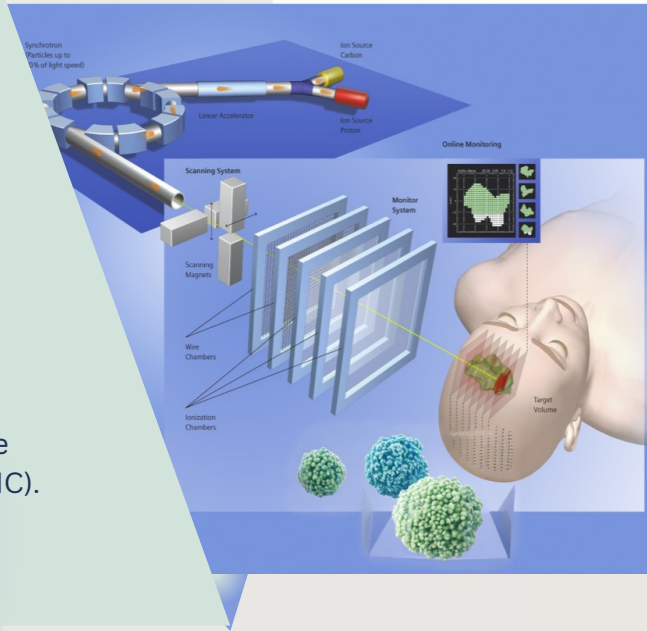
International
Global
Organisation:

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DISCOVER THE PTMC JOURNEY

Embark on a journey of discovery with the Particle Therapy Masterclass (PTMC).



BORN OUT OF A VISION TO HIGHLIGHT THE RELEVANCE OF FUNDAMENTAL AND APPLIED SCIENCES FOR CANCER TREATMENT

PTMC is an integral part of the renowned International Physics MasterClasses (IMC) programme. **Dive into the world where science meets society!**

Join the Global Community

Encourage high-school students to **join the global PTMC community!** With participants from all corners of the world, PTMC offers your students an unparalleled opportunity to learn, engage, and contribute to the cutting-edge field of particle therapy.

Unlock a World of Knowledge

PTMC is more than a class—it's a **hands-on learning journey.** Students can use actual techniques and tools in particle therapy, making theoretical knowledge a tangible practical experience. From insightful lectures to hands-on sessions, PTMC is the students' gateway to the captivating world of particle therapy.

Shape Students' Future

PTMC is more than a learning opportunity—it's a stepping stone to young students' futures. Experiencing the PTMC, they get motivated to follow studies and career paths in rapidly evolving sciences and medicine. **Are you a high-school teacher?** Encourage your students to experience the PTMC!

Experience Innovation First-Hand

The PTMC sessions guide your students into the practical side of particle therapy. They gain hands-on experience preparing treatment plans, prescriptions for particle therapy, with **matRad, an innovative open-source software toolkit** developed by the German Cancer Research Center (DKFZ) for research and educational purposes. Students can compare and witness the benefits of carbon-ion treatment of cancer tumours, a therapy pioneered in Europe by GSI in the 90's.

Make a Difference

- ✔ The PTMC project connects participants to a global community, joining forces towards the **advancement of particle therapy.**
- ✔ It helps **inspire a new generation of scientists,** fostering interest in physics and related studies.
- ✔ Your participation aids in the growth of this crucial field, potentially **revolutionizing cancer treatment.**