

N°1

Friday, July 18TH

—PHYSICS—

BEYOND FRONTIERS



International
Physics Olympiad
FRANCE 2025



Welcome to France!

Some useful
french phrases!

Cité des sciences
et de l'industrie

Three French
medal winners

Welcome to the 55th International Physics Olympiad in Paris



Dear Participants, Leaders, Observers, and Friends of the International Physics Olympiad (IPhO),

It is with immense pride and joy that I welcome you to the 55th International Physics Olympiad (IPhO 2025) in Paris, France — a city renowned for its rich scientific heritage and vibrant intellectual spirit which thrives amidst the artistic and architectural marvels of the city. Since its inception in 1967, IPhO

has stood as a beacon of excellence, fostering the brightest young minds in physics and uniting nations through the universal language of science. Over the decades, IPhO has grown into a prestigious platform where students from around the world showcase their ingenuity, problem-solving skills, and passion for physics. This competition is more than just a test of knowledge — it is a celebration of curiosity, perseverance, and international camaraderie. The rigorous theoretical and experimental challenges are designed not only to push boundaries but also to inspire the next generation of physicists, innovators, and leaders.

To our student contestants: Your dedication and brilliance bring vitality to this Olympiad. Whether you are solving complex problems or engaging with peers, cherish this opportunity to learn and grow. To the team leaders, observers and guides: Your mentorship and commitment are the backbone of this event. Together, we uphold the spirit of scientific collaboration and fair

competition. As we gather in Paris — home to legendary scientists like Marie Curie and Henri Poincaré — let us honor the legacy of excellence in science while enjoying the harmonic resonance of shared curiosity in physics. May IPhO 2025 ignite curiosity, foster friendships, and reaffirm our shared pursuit of knowledge.

Welcome to IPhO France — let the journey begin!

Warm regards

Professor Rajdeep Singh Rawat
President, International Physics Olympiad



Dear IPhO participants,

The French Physical Society (Société Française de Physique) and the organizing committee are delighted to welcome you to Paris and the Île-de-France region for the 55th International Physics Olympiad. This exceptional edition benefits from the patronage of the President of the French Republic, Mr. Emmanuel Macron, and the support of six french Nobel Prize laureates in physics.

At the time of writing, 418 candidates from 89 delegations have registered, including only 38 girls. They are accompanied by 287 leaders, observers or guests. To welcome you in the best possible conditions, the organizing committee has mobilized a large number of volunteers: members of the organizing committee, the scientific committee, team guides, logistics volunteers, markers, members of the technical teams... a total of over 300 people who have made it possible to host this event in France.

Organizing the IPhO means above all providing candidates with top-quality tests and excellent test-taking conditions. The prestigious École Polytechnique immediately agreed to host the tests, and the scientific committee worked intensively for over a year to develop the experimental and theoretical subjects.

Organizing the IPhO also means introducing participants to some of France's cultural and scientific heritage. You'll have the chance to visit the Château de Versailles, discover Paris

on a cruise on the Seine and admire the works of famous painters and sculptors at the Musée d'Orsay... Candidates will also visit some of the most prestigious laboratories in the Paris region.

We hope you enjoy your stay.

Bienvenue à Paris!

Dominique Obert
Co-chair of the organizing committee



100% FRENCHIE

In France, the title "**docteur**" or "**professeur**" is only used for medical graduates such as doctors or surgeons.

Scientists and physicists in particular are known with "**madame**" - for Mrs - or "**monsieur**" - for Mr.

Many of the volunteers involved in the organisation are "doctors". Just friendly call them by their first names!

Some useful french phrases!

Bonjour

Good morning

Bonsoir

Good evening

Bonne nuit

Good night

Au revoir

Good bye

A bientôt

See you soon

Merci

Thank you

Merci beaucoup

Thank you very much

Excusez-moi

Excuse me

Je suis désolé(e)

I'm sorry

Bon appétit

Enjoy your meal

Quel est le prix ?

How much is it ?

Où est ... ?

Where is....?

Puis-je vous aider ?

Can I help you ?

Je voudrais aller à...

I would like to go to...

J'aime bien

I enjoy

Attention !

Be careful !

Oui/non

Yes/no

La physique

Physics

Le physique

The physical

Symbols of France



The blue-white-red flag

According to tradition, blue and red are the colors of the city of Paris, and white was the color of the King of France in 1789, the year of the French Revolution.



The official motto

liberty-equality-fraternity, found on the pediment of every town hall.



The symbolic animal

For sports enthusiasts, the symbolic animal of France is the rooster.



The national anthem

La Marseillaise, a patriotic song of the French Revolution composed by Rouget de Lisle in 1792.



The allegory of the French Republic

The allegory of the French Republic, then of the French people, is a woman named Marianne, as seen in Eugène Delacroix's painting *La liberté guidant le peuple*.



YOUR TURN TO SPEAK

We have just arrived in France



Team Morocco

Mehdi Meknassi

“

My name is Mehdi Meknassi, I'm from Morocco. I'm here with Mohamed Bouaouda, Nizar Lotfeallah, Zakariae Khalifa, and Rayane Fars, we're all from Morocco. We qualified through the National Physics Olympiad programme, and we're here in Paris to take part in the International Physics Olympiad and represent our country.

As for us, there's not much that stresses us out. We're here first and foremost to participate, and why not aim for a title, especially since it's our first time competing here. So that's what we're going to try. For now, we're doing okay with stress.

You know, the weather is probably the biggest difference compared to Morocco. Morocco is hot, and the climate here is quite different.

I've been hearing about French cooked snails for a long time. We also have snails in Morocco, but I think they're completely different. ”



Team Croatia

Luka DUPLANCIC

Karlo AHEL

Val Karan

“

We're from Croatia, we're three Croatian students. My name is Val, my name is Luka, and I'm Karlo.

Our flight was okay. It was one hour and a half long. We flew with Croatian Airlines and it was fine. I'm [Luka] not really nervous, but I'm looking forward to the competition and to the sightseeing in Paris.

Basically anything out of all of your pastries will be great to try. I [Val] would like to try those things. But other than that, like some of your salads and wine [Karlo]...Oh and pancakes! And cheeses as well. We would like to eat a lot.

The sheer size of Paris surprised me [Karlo]. It took us an hour from the airport to here. More than an hour from the airport to here actually. And like, it Croatia, Shenzhen, which is the biggest city, it takes half an hour at the most. ”



Team France

Hugo Chartoire

Adam Kubica-Djabri

Aur lie Flieller

Marie Gaillard

“

This week, I'm especially excited to meet lots of people from different countries. The visits are also going to be fun, even though we obviously already know a bit about what we're going to see.

It's still a pretty incredible experience. We'll meet people from all over the world.

I was a bit more apprehensive about the experimental part, since we've mostly prepared for the theory, and it's quite different from what we usually do in school.

Why physics? Did we choose it? It's kind of a coincidence. We like physics, we're good at it, and the Olympiads are coming up.

We had already won some prizes before the selection.

There are also maths Olympiads, but they're only for high school students. And since I personally didn't study much in high school, and only really started working hard in preparatory classes, there were only the physics and chemistry Olympiads left. Unfortunately, the pre-selection for both took place on the same day. I had to make a choice there, and I picked physics. I think it's a little more stylish than chemistry. ”

Cité des sciences et de l'industrie



Nestled in the heart of the Parc de la Villette in Paris, this museum is one of Europe's most renowned science institutions, designed to make scientific knowledge accessible to all.

Here, visitors don't just observe, they explore, experiment, and interact. From permanent exhibitions on energy, climate, and the universe to high-tech temporary exhibits and a cutting-edge planetarium, the Cité offers an immersive and hands-on approach to learning. Younger audiences are also invited to discover science through play in the dedicated Cité des enfants spaces.

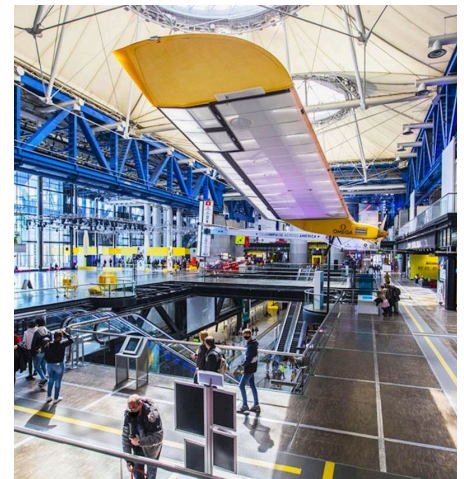
The Cité des sciences et de l'industrie is one of the biggest science museums in Europe, attracting millions of visitors each year. This monumental and futuristic structure, designed by the architect Adrien Fainsilber, stands as a

symbol of modernity. With its striking glass, concrete, and steel façade, the Cité des sciences et de l'industrie represents a bold architectural vision of a space where science is not only displayed but experienced.

The building was originally a cowshed, a 3-storey auction house, a livestock market and a slaughterhouse. In the end, it made more sense to slaughter the animals where they were raised, then transport the meat in refrigerated trucks to the capital. It was then converted into a science and technology exhibition space: the Cité des sciences et de l'industrie, inaugurated on March 13, 1986, the day of the encounter between Halley's comet and the Giotto astronomical probe (the first European space mission to explore the solar system).

In addition to space for permanent and temporary exhibitions, it includes a library, a planetarium, the Argonaute submarine and a geode for immersive cinema, comprising a 1000 m² screen in a 36m diameter sphere. The visible outer layer is made up of 6433 polished steel triangles that are not joined to allow for thermal expansion. Water seeping between them is collected in the basin surrounding the geode.

Hosting the IPhO 2025 opening ceremony in this landmark of scientific culture is more than symbolic; it is a celebration of France's legacy in science and its ongoing commitment to education, innovation, and international exchange. Today, we will welcome over 1000 people from all over the world to this iconic venue.



? WHAT ARE THEY DOING TODAY?

Three French medal winners

Sophie Marbach

Bronze medal 2010

CNRS Research Scientist (CR), Sorbonne University, Paris

Awarded the l'Oréal-Unesco grant For Women in science in 2017

The IPHO 2010 was in Croatia, a beautiful and diverse European country! I've done many challenging intellectual things since then, but it's an entirely different challenge when there's a huge banner saying «FRANCE» on your t-shirt on your back! I thought I had done a really bad job going out of the sessions, but I ended up quite happy and with a beautiful Bronze medal. I met so many people from everywhere, which made me realize how much I love interacting and learning from others. I am now a physics researcher in Paris, I interact nearly daily with scientists internationally, I supervise several students, and every day, I'm enjoying trying to identify hidden mechanisms behind unexplained phenomena!

Despite coming from a progressive country, I was the only woman in my IPHO team. This pattern followed me throughout higher education and still follows me in my career. I sometimes still think I can't make it; in part because science is hard, but also because of this pattern. Yet, scientific evidence supports that gender is not correlated with the ability to solve difficult scientific problems.

So... don't panic, stay focused, and whatever happens, try everything, you can solve it!



Swann Piatecki

Bronze medal 2006

Head of Product Management, Squarepoint

After the 2006 IPHO in Singapore, I further studied physics at Ecole Normale Supérieure in Paris, where I eventually defended a PhD thesis in computational quantum physics on Bose-Einstein condensates at unitarity, a limit in which two atoms will not form a bound pair, but three atoms will form a bound triplet. I then decided to apply the skills that I had acquired through studying physics to finance at Squarepoint, where I now am the head of Product Management and the General Manager of the Paris office.

Jean-Michel Courty

Bronze medal 1983

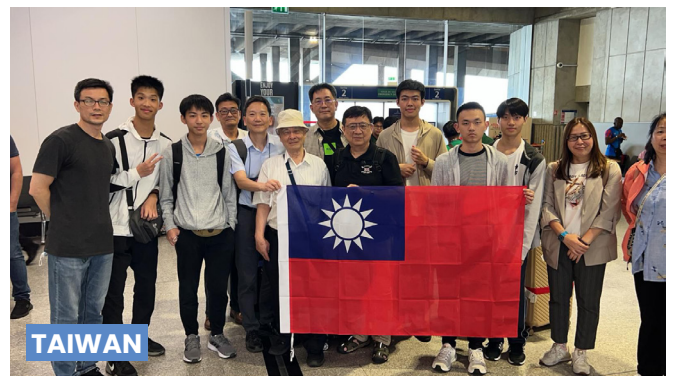
Professor at Sorbonne University, Paris

In 1983, I took part in the International Physics Olympiad (IPHO) in Bucharest, where I was awarded a bronze medal and a special prize for the originality of my solution to one of the problems. I enjoyed it so much that I prepared for and was selected to take part in the 1984 Chemistry Olympiad in Frankfurt. I won a silver medal. I then studied at the École Normale Supérieure de Paris, defending a PhD in quantum optics at the Laboratoire Kastler Brossel. I have continued to work in this laboratory throughout my career, first as a CNRS researcher and, since 2003, as a physics professor at Sorbonne University. My research focuses on manipulating quantum fluctuations of light and the ultimate limits of high-sensitivity measurements. Since 2000, the proportion of my activity devoted to physics outreach has grown continuously. Since then, I have co-authored the monthly column 'Idées de physique' with Edouard Kierlik in Pour la Science, the French edition of Scientific American. We regularly give conferences with lots of live experimental demonstrations. During the pandemic, I created the Merci la Physique YouTube channel.





PAKISTAN



TAIWAN



BOSNIA AND HERZEGOVINA



TURKEY



THAILAND



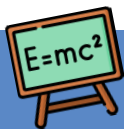
MALAYSIA



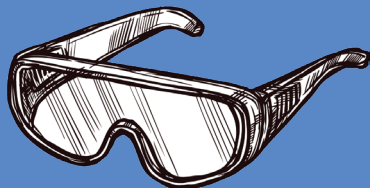
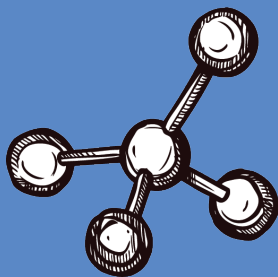
MONTENEGRO



NORTH MACEDONIA



Physics On This Day



JULY 18, 1898

Note by Marie and Pierre Curie “On a new radio-active substance in pitchblende” presented to the The French Academy of sciences.

Henri Becquerel presented the note: neither Marie nor Pierre Curie were members of the Académie des Sciences (Pierre Curie was elected in 1905, but Marie Curie never was...). The note is based on the fact that compounds of Uranium or Thorium are more active than these elements. So there had to be another “substance”. The note goes on: “We therefore believe that the substance we have removed from the pitchblende contains a metal not yet reported [...] If the existence of this new metal is confirmed, we propose to call it polonium, after the country of origin of one of us”. And this is the first mention of the term “radio-active”.



Schedule

Saturday, July 19



Student

9:00AM – 2:00PM: Experimental exam

4:00PM – 6:00PM: Conferences

7:30PM – 9:30PM: Dinner at Cité
Internationale de Paris



Leaders & observators

10:00AM – 5:30PM:
Visit — Château de Versailles



Happy birthday to



WANG, KUAN-YU
from Taiwan

and for yesterday, happy birthday to
Victor Mei from Belgium
Miklós Téti from Hungary
Carson Tai Kar Shing from Malaysia

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