

Outreach, Communication & Masterclasses



Institut "Jožef Stefan", Ljubljana, Slovenija

F9 Retreat · 29 September 2026

Making F9 visible, understandable and connected to people

From one-off events → a coherent outreach ecosystem

M. Bračko, T. Novak, (AI: generated framework)

Why outreach matters for F9

- Particle physics is one of our strongest public-facing stories.
- Outreach is not only “explaining physics” — it connects F9 to students, teachers, the public and future colleagues.
- Good communication makes our research legible beyond the immediate collaboration.
- Masterclasses give us something especially valuable: authentic contact with real data and real researchers.
- The strategic question: how do we turn individual activities into a sustained F9 presence?

What are the activities we cover?

F9 research areas

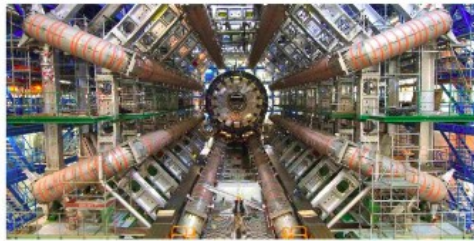
Collaboration in leading HEP experiments

Energy frontier: ATLAS @ CERN

Intensity frontier: Belle II @ KEK in LHCb @ CERN

Cosmic frontier: Pierre Auger, CTAO

Developing solutions for high-performance computing and particle detectors.



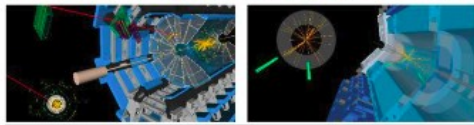
Energijsko obzorje
The Energy Frontier



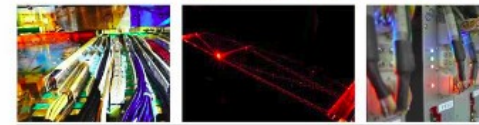
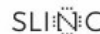
Obzorje pogostosti
The Intensity Frontier



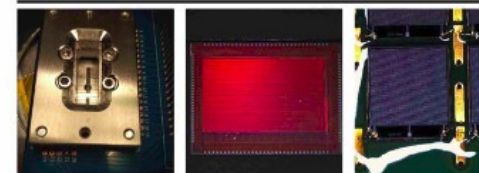
Kozmično obzorje
The Cosmic Frontier



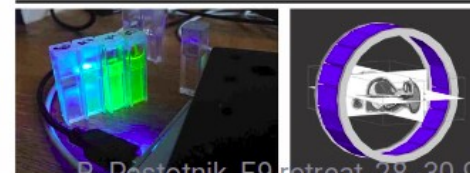
Superračunalništvo
Supercomputing



Razvoj detektorjev
Detector development



Medicinska fizika
Medical physics



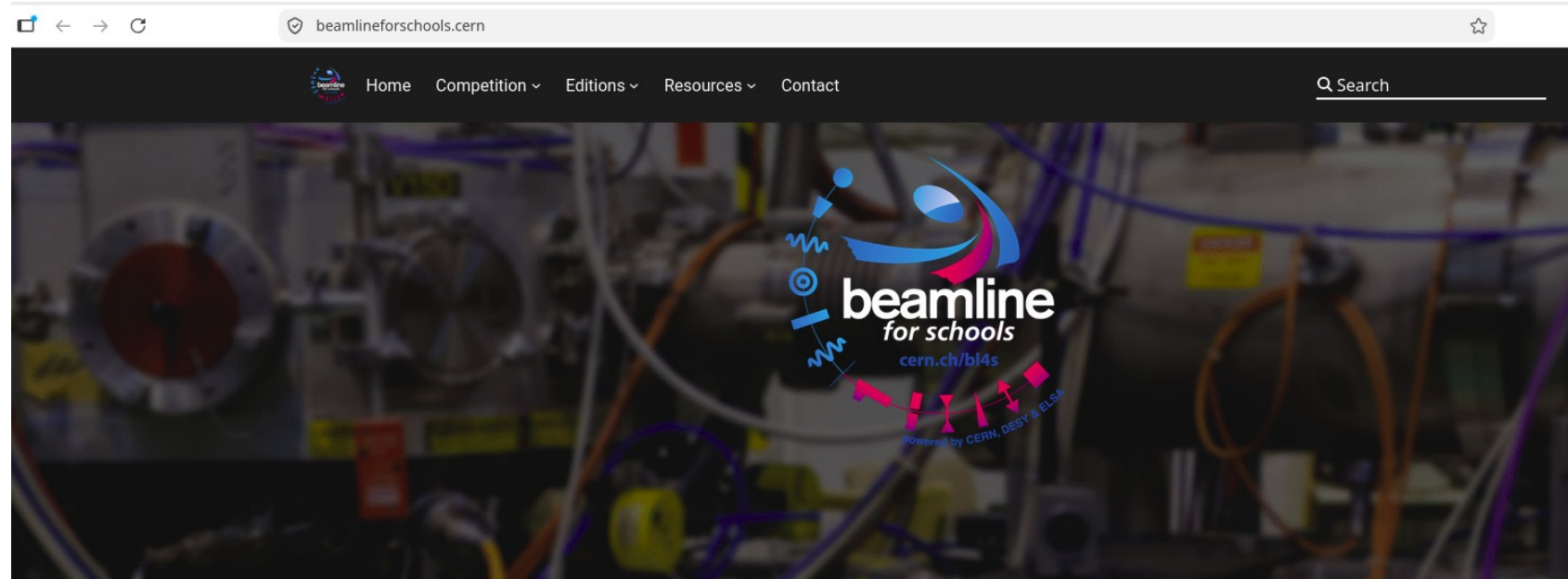
R. Pešotnik, F9 retreat, 28. 30.9.2026

What are the activities we cover?

- Our outreach, communication activities are ~ coherent:
We try to cover the promotion of science, physics, (experimental) particle physics, medical physics, experiments and experimental facilities (CERN, KEK, ATLAS, Belle II, ...), institutions (JSI-F9, FMF UL, ...)
- People: → the efforts are coordinated by **Tadej Novak, Marko Bračko, Andrej Studen** ;
 - participants in various events: (almost) everyone in the department ;
 - self-initiative: interviews, public lectures, ... ;
 - not coordinated, but connected: Auger & CTAO (see a talk by M. Zavrtanik)
-

What are the activities we cover?

- **Beamline for schools**
(<https://beamlineforschools.cern/>) ;
- Slovenia is able to participate
(contact person: Tadej Novak) ;
- Teachers as coordinators?
- Should we organise an
intro/networking event?
(Would require much more effort from
our side...)



Beamline for Schools

A PDF copy of the certificates has been shared via email. Get in contact with your team coach.
Participation certificates and prizes for the 2026 edition will be shipped soon.

You can find the joint press release from CERN, DESY, and the University of Bonn (ELSA)
announcing the winning teams: [here](#).

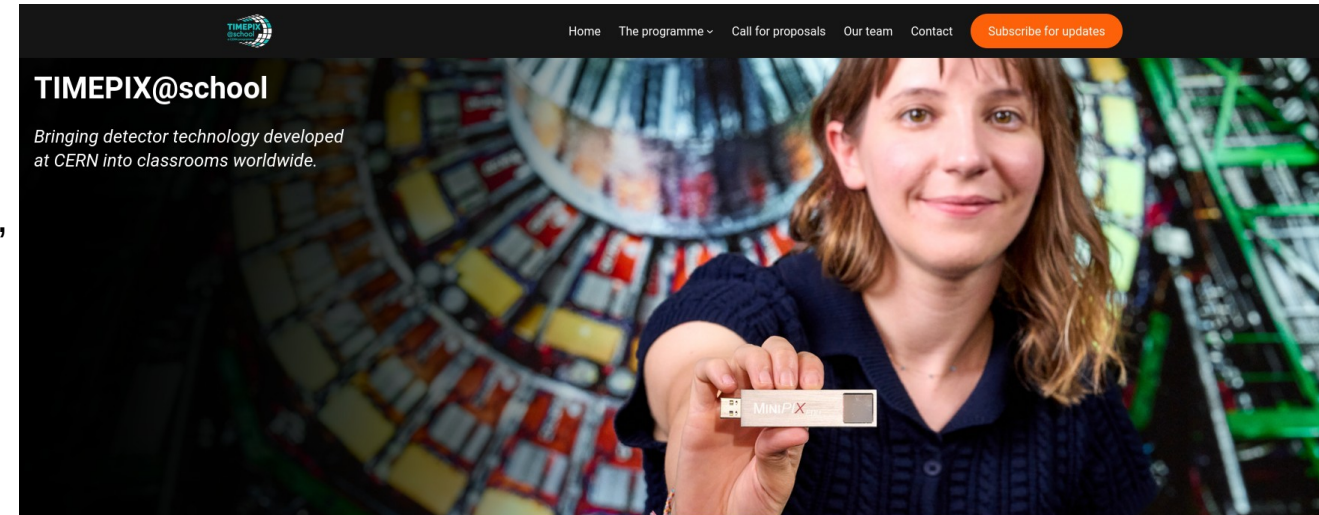
2027 edition will be announce soon. Stay tuned!

What are the activities we cover?

- **TIMEPIX@school**
(<https://timepix-at-school.web.cern.ch/>) ;
- TIMEPIX@school launches in the 2026–2027 academic year, bringing detector technology developed at CERN into high-schools' classrooms. The Timepix chip was developed within the CERN Medipix2 Collaboration and is used in fields including high-energy physics, medicine, aerospace and art.
- Approximately five regional hubs were selected from ~100 applications. The Jožef Stefan Institute was chosen as the Slovenian hub and will coordinate teacher training, manage and transfer MiniPIX EDU kits between partner schools, and provide support.
- At school, teachers will use the kits in lessons and student projects. Students can observe radiation tracks in real time, investigate background radiation and cosmic rays, and analyse their measurements on a computer. Activities can range from short experiments to longer research projects.
- Timeline: October: hub training; November: launch in classrooms

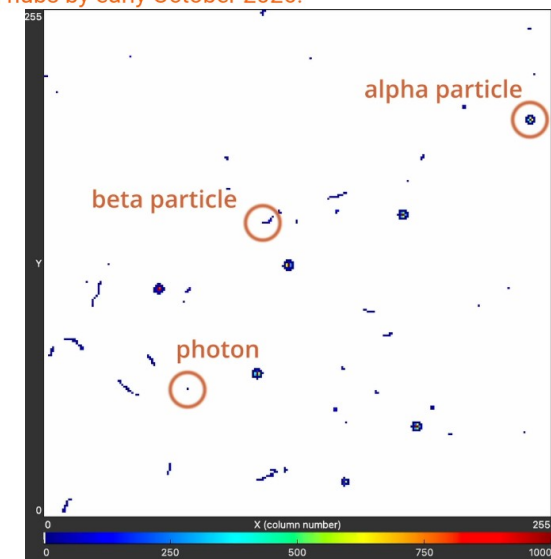
Involved persons: Andrej Lozar (F9), Nejc Košnik (F1), Anja Kranjc Horvat (CERN)

F9 Retreat 2026, Krvavec · Outreach, Communication, Masterclasses



Applications for the current call are now closed.

We expect to announce the final list of participating hubs by early October 2026.



What are the activities we cover?

→ Help with schools/faculties visits in CERN.

→ Education programmes for teachers:
(Slovenia – [education-programmes.web.cern.ch](https://education-programmes.web.cern.ch/web.cern.ch))

Sep 7 – 12, 2025
CERN
Europe/Zurich timezone

Enter your search term

Overview

Timetable

Useful links

Administrative Support:
✉ teacher.programmes@cern.ch

Slovenski program za učiteljice in učitelje 2025 bo potekal med 7.-12. septembrom 2025. Tekom programa bodo učitelji in učiteljice izkusili skrivnosti fizike delcev preko predavanj, razstav, delavnic in, seveda, vodenih ogledov CERNa.

Letos program še razširjamo z ogledom centra ITER, kjer bomo moderno fiziko raziskali še globlje in iz druge perspektive.

Po koncu programa tako upamo, da se bodo učitelji in učiteljice vrnili v Slovenijo z novimi idejami in novim navdušenjem nad fiziko delcev, ki jo bodo prenesli tudi na svoje dijake in dijakinje. Morda bo ravno ta izkušnja doprinesla k večanju novih generacij fizikov, inženirk, specialistov na področju informacijskih tehnologij, razvijalk novih metod za pridobivanje energije ...

The **Slovenian Teacher Programme 2025** will take place from 7-12 September 2025. Lectures, on-site visits, exhibitions, and hands-on workshops will introduce its participants to cutting-edge particle physics. We hope our participants will go back to Slovenia as ambassadors, who pass on the subject to our next generation of physicists, engineers, IT specialists...

Slovenian Teacher Programme 2025:
<https://indico.cern.ch/e/SITP25>

Teacher Programmes Manager:
Jeff Wiener: 0041 75 411 9010

In case of emergency:
CERN fire brigade: 0041 22 76 74444

**Starts** Sep 7, 2025, 6:00 AM
Ends Sep 12, 2025, 11:00 PM
Europe/Zurich

 CERN

[Anja Kranjc Horvat](#)
[Andrej Gorisek](#)
[Jeff Wiener](#)

 [IMG_4278.jpeg](#)



Slovenian Teacher Programmes

National Coordinators
[Anja Kranjc Horvat](#) ✉
[Andrej Gorisek](#) ✉

Upcoming Programmes
V bližini CERNa poteka slovenski program za učitelje. Zanimajoči učitelji se lahko prijavijo na Mednarodne programe za učitelje.

Next edition:
2027 or 2028

→ Past programmes

- [Slovenian Teacher Programme 2025](#)
- [Slovenian Teacher Programme 2023](#)
- [ONLINE Slovenian Teacher Programme 2021](#)
- [Slovenian Teacher Programme 2019](#)



• Outreach, Communication, Masterclasses

What we already have

≈50

students at the 2026 International Masterclass

6th

consecutive F9 masterclass in 2026

31st

IPPOG collaboration meeting hosted in Ljubljana

International Masterclasses: ATLAS, Belle II and particle-therapy activities.

Public lectures, visits, exhibitions and media-facing science communication.

International network: active connection to IPPOG and the wider particle-physics outreach community.

F9 already has the ingredients — the opportunity is to package them more systematically.

Sources & verification notes

Public sources used for the 2020–2026 overview

F9 News & Events archive: Masterclasses 2023–2026; 2024 exhibition and public events.

F9 / IJS: International Masterclasses 2024 and 2026.

F9 / IJS: Ljubljana hosts the 31st IPPOG Collaboration Meeting (2026).

Hiša eksperimentov: Znanstival archive (2021–2025 editions listed).

Government of Slovenia: European Researchers' Night 2024 and 2025 programmes.

Slovenian Science Foundation / Culture of Slovenia: 26th Slovenian Science Festival (2020).

Important: the public web record does not consistently identify F9 participation by name for every festival edition. I have therefore avoided assigning a specific F9 role/year where it cannot be verified publicly.

Masterclasses: the strongest outreach format

A student experiences the full chain: physics idea → detector → data → analysis → interpretation.

The activity is hands-on rather than purely demonstrational.

International videoconference gives the day a genuine global dimension.

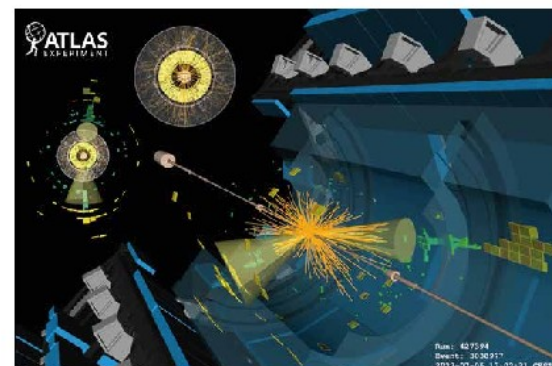
The 2026 programme combined ATLAS and Belle II data analysis with a medical-physics treatment-planning exercise.

The target should be repeat participation, stronger teacher links and a clear pathway from school → university → F9.

International Masterclasses

2021-2026

17. marec 2026, Institut Jožef Stefan v Ljubljani



MEDNARODNI MASTERCLASS IZ FIZIKE DELCEV



**Preizkusi se v vlogi
raziskovalca/raziskovalke,
odkrij skrivnosti fizike delcev
in sodeluj z mladimi s celega sveta!**

- Predstavitev **osnov raziskav v fiziki delcev**, kozmologije in hadronske terapije.
- **Analiza pravih podatkov** detektorjev ATLAS in Belle II.
- **Simulacija radioterapije** z izdelavo načrta za zdravljenje raka.
- **Virtualni sprehod** po detektorju Belle II na Japonskem.
- **Pogovori z raziskovalci in raziskovalkami**, ki delajo v CERNu (Švica) ter na Belle II (Japonska).
- **Spletna konferenca z mladimi iz celega sveta.**



Več informacij in prijave na:
<https://indico.ijs.si/event/3241/>



International Masterclasses - 2026

08:30 → 08:40	Registracija udeležencev	10m	A/2-A214 - Velika predavalnic...	
08:40 → 08:50	Uvod Speakers: Marko Bracko (J. Stefan Institute, F9), Andrej Studen (IJS), Tadej Novak (Jožef Stefan Institute) IMC2026-Uvod_M...	10m	A/2-A214 - Velika predavalnic...	
08:50 → 09:40	Fizika osnovnih delcev Speaker: Tomaž Podobnik msclss-2026-ijs.p...	50m	A/2-A214 - Velika predavalnic...	
09:40 → 10:30	Eksperimentalne metode v fiziki osnovnih delcev Speakers: Peter Križan, Samo Korpar (University of Maribor and IJS) Masterclass-IJS_...	50m	A/2-A214 - Velika predavalnic...	
10:30 → 11:10	Odmor	40m	A/2-A214 - Velika predavalnic...	
11:10 → 11:55	Uporaba delcev v medicinske namene Speaker: Andrej Studen (IJS) PTMasterclass20... PTMasterclass20...	45m	A/2-A214 - Velika predavalnic...	
11:55 → 12:00	Skupinska fotografija DOVOLJENJE_ZA...	5m		

International Masterclasses - 2026

		Uvodna razprava	
		 DOVOLJENJE_ZA...	
12:00	→ 13:00	Kosilo in pogovor z raziskovalci	🕒 1h 📍 Restavracija na IJS
13:00	→ 13:30	Uvod v analizo podatkov, ATLAS	🕒 30m 📍 Predavalnica 3.12 (FMF) 
		Speaker: Tadej Novak (Jozef Stefan Institute)	
		 ATLAS_Mastercla...	
13:00	→ 13:30	Uvod v analizo podatkov, Belle II	🕒 30m 📍 Predavalnica (MPŠ Instituta J... 
		Speaker: Marko Bracko (J. Stefan Institute, F9)	
		 IMC2026-Analiza...	
13:00	→ 13:30	Uvod v delavnico Particle Therapy	🕒 30m 📍 Predavalnica Triglav (FMF) 
		Speaker: Andrej Studen (IJS)	
13:30	→ 15:45	Delavnica - Particle Therapy	🕒 2h 15m 📍 Predavalnica Triglav (FMF) 
		Speaker: Andrej Studen (IJS)	
13:30	→ 15:45	Delavnica - analiza podatkov z detektorja ATLAS	🕒 2h 15m 📍 Predavalnica 3.12 (FMF) 
		Speakers: Andraž Tomšič, Ines Gabor, Lenart Jerala (IJS), Maša Kotnik, Tadej Novak (Jozef Stefan Institute)	
		 Ilustracija - Identif...	 Navodila
13:30	→ 15:45	Delavnica - analiza podatkov z detektorja Belle II	🕒 2h 15m 📍 Predavalnica (MPŠ Instituta J... 
		Speakers: Andrej Lozar, Anja Novosel, Kristof Spenko, Luka Šantelj, Marko Bračko, Dr Rok Pestotnik (Jozef Stefan Institute)	
		 masterclass_3bar...	
15:45	→ 16:00	Odmor	🕒 15m
16:00	→ 17:00	Video konferenca	🕒 1h 📍 Predavalnica (MPŠ Instituta J... 
		Speaker: Marko Bracko (J. Stefan Institute, F9)	
		 IMC2026.03.17-O...	 Zoom link
16:00	→ 17:00	Video konferenca ATLAS	🕒 1h 📍 Predavalnica 3.12 (FMF) 
		Speaker: Tadej Novak (Jozef Stefan Institute)	
16:00	→ 17:00	Video konferenca Particle Therapy	🕒 1h 📍 Predavalnica Triglav (FMF) 
		Indico link	
		Zoom link	
		Speaker: Andrej Studen (IJS)	

Events for the promotion of science

2020

Evropska noč raziskovalcev 2020

V letu 2020 smo imeli Noč raziskovalcev na daljavo:

Na webu so bili trije filmi:

- Standardna predstavitev F9 by Bojan Hiti:

<http://www-f9.ijs.si/~andrejg/NR/F9predstavitev.mp4>

- Iskrna celica:

<http://www-f9.ijs.si/~andrejg/NR/KozmicniMioni.mp4>

- Meglicna celica, ki jo bomo skupaj tudi sestavili:

<http://www-f9.ijs.si/~andrejg/NR/CloudChamber.mp4>

Število obiskovalcev: : >100

2021

Evropska noč raziskovalcev 2021

24. 9. 2021 v parku IJS

Delavnica Kako lahko vidimo osnovne delce, dr. Marko Bračko, dr. Andrej Gorišek

2022

Evropska noč raziskovalcev 2022

30. 9. 2022

Delavnica Kako lahko vidimo osnovne delce, dr. Marko Bračko, dr. Andrej Gorišek

Events for the promotion of science

2023

Tržnica raziskovalcev 2023

'Tržnico' raziskovalcev pripravljamo skupaj s Šolskim centrom Nova Gorica. Dogodek bo potekal v četrtek 20. aprila med 10:15 in 13:30 uro (4 šolske ure) v prostorih Šolskega centra.

Pod njeno okrilje spadajo številne srednje šole,

kot so Strojna, prometna in lesarska šola, Elektrotehniška in računalniška šola, Gimnazija in zdravstvena šola, Biotehniška šola ter Srednja ekonomska in trgovska šola.

Andrej Lozar, , Jernej Debevc (?), Andrej Seljak(?)

Noč raziskovalcev 2023

Noč raziskovalcev 29. 9. 2023 večer odprtih vrat na IJS med 17. in 22. uro

Delavnica Kako lahko vidimo osnovne delce, dr. Marko Bračko, dr. Luka Šantelj, Andrej Lozar, Anja Novosel, Blaž Leban

Znanstival 2023/Vrt eksperimentov

Anja Novosel.

Events for the promotion of science

2025

Sodelovanje na vrtu eksperimentov 2025: 30. 5. in/ali 31. 5. 2025

Udeležbo smo že potrdili za soboto, 31. maja, med 14. in 18. uro.

Marko Bračko, Anja Novosel, Andraž Tomšič, Jernej Debevc, Maša Kotnik

Arena tehnologij 2025

Tehnološki park 25. 9. v Križankah, Ljubljana, organizira **Arena tehnologij.**

Andrej Lozar, Anja Novosel

2026

Hiša eksperimentov, slovenski center znanosti organizira letos 17. Znanstival – mednarodni festival znanosti, ki bo potekal v Ljubljani med 29. majem in 31. majem 2026.

IJS bo sodeloval na Vrtu eksperimentov, ki bo potekal v PETEK, 29. in v SOBOTO, 30. maja med 10. in 18. uro na Stritarjevi ulici v Ljubljani.

Marko Bračko, Anja Novosel, Maj Leandro Klančnik Kunstelj

Communication: from activity to story

Before: announce what is happening and why it matters.

During: show people, instruments, data and the human side of research.

After: publish the result while the event is still fresh.

Keep a small library of reusable material: photos, detector images, event displays, short explanations and researcher quotes.

Make the F9 website the stable home; use other channels to bring people there.

Discussion

**What do we want F9 outreach to achieve
in the next 3-5 years?**

People · Reach · Quality · Continuity · Impact

Science festivals & public-facing formats

Znanstival (Ljubljana) — a major public science festival organised by Hiša eksperimentov; editions continued through 2021–2025.

Slovenian Science Festival — a long-running national science-popularisation event; the 2020 edition marked its 26th year.

European Researchers' Night / Noč raziskovalcev — a recurring national platform for direct contact between researchers and the public; IJS was part of the 2020 consortium and later programmes.

Jožef Stefan Days — an IJS-wide public programme that gives F9 a natural local platform.

Exhibitions and public lectures — e.g. CERN in Images & Proton Football (2024) and public lectures around particle physics.

Strategic point: these formats reach audiences that will never come to an F9 Masterclass.

Where F9 fits in the Slovenian outreach ecosystem

SCHOOLS

Masterclasses
School visits
Teacher contacts

FAMILIES & PUBLIC

Znanstival
Researchers' Night
Open events

SCIENCE COMMUNITY

IPPOG
Science festivals
Science communication

INTERNATIONAL

CERN / experiments
International Masterclasses
Global videoconferences