

# FZU – Institute of Physics & LRI in CZ

Michael Prouza, FZU Director



# FZU – Institute of Physics of the Czech Academy of Sciences

- Part of the Czech Academy of Sciences
- FZU is the largest institute of the Academy – over 1400 employees (~ 1200 FTEs)
- More than 65 years of history
- World-leading and internationally excellent scientific results



# Czech Academy of Sciences

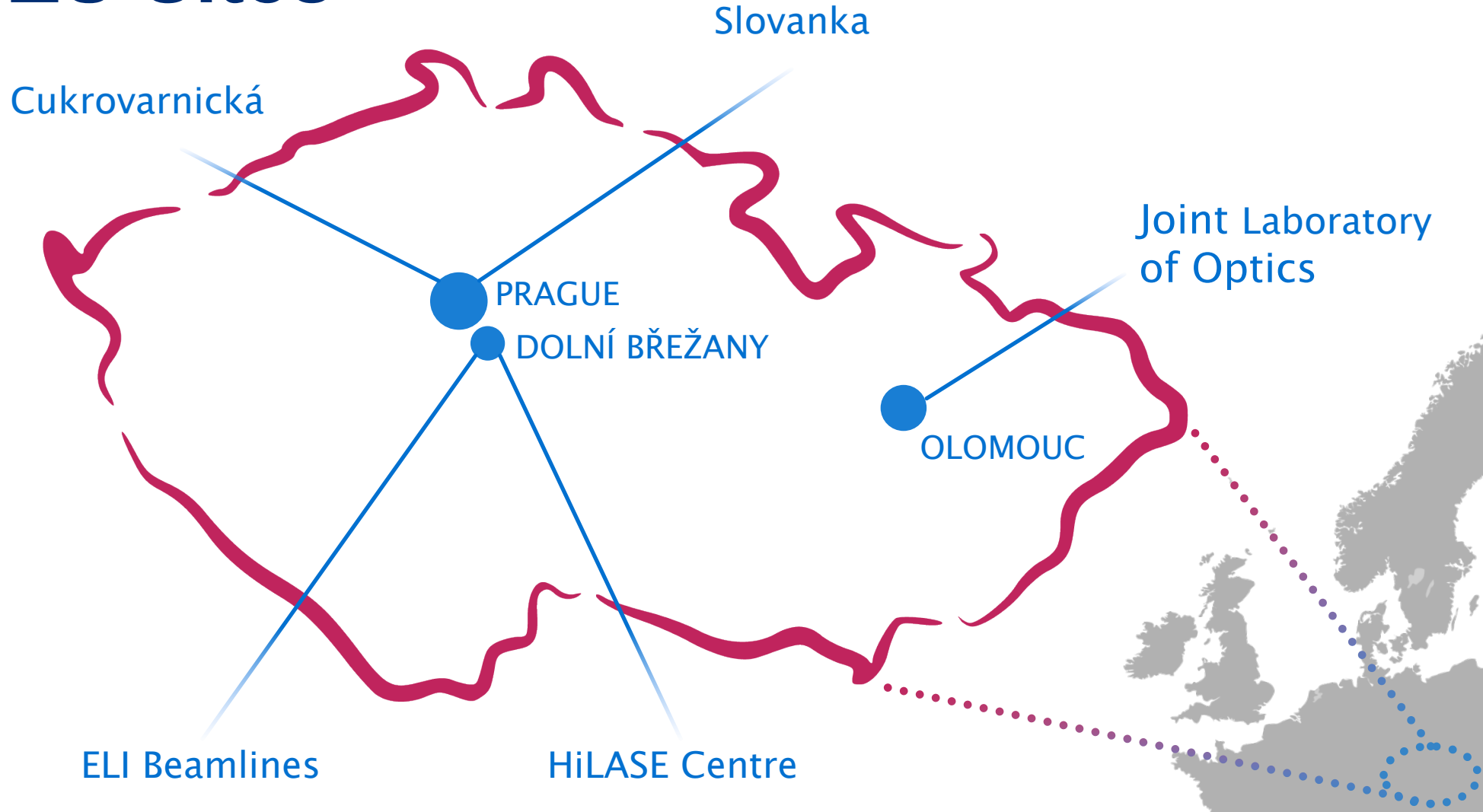
- Largest research body in the Czech Republic, connecting the public research institutions
- 54 institutes covering all science fields
- More than 10 000 employees
- 15% of researchers in the Czech Republic, 37% of outputs in international journals



# FZU – Institute of Physics of the Czech Academy of Science

- One out of more than 50 institutes of the Czech Academy of Sciences (CAS)
- The largest institute of CAS
- more than 1/9 of whole CAS (in 2021: 1201 FTE FZU / 10107 FTE CAS)
- Operational budget: 2,3 billion Kč (93 million EUR) in year 2021
- Investment budget: 0,7 billion Kč (28 million EUR) in year 2021

# FZU Sites





# FZU Facilities

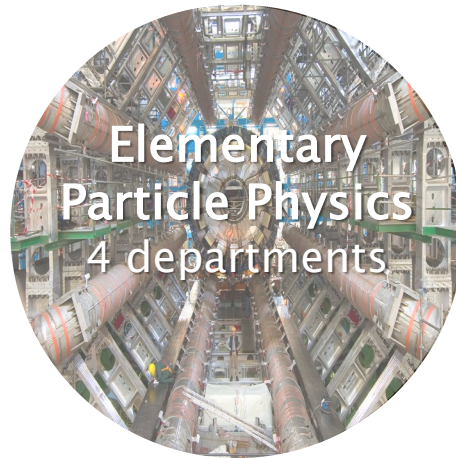
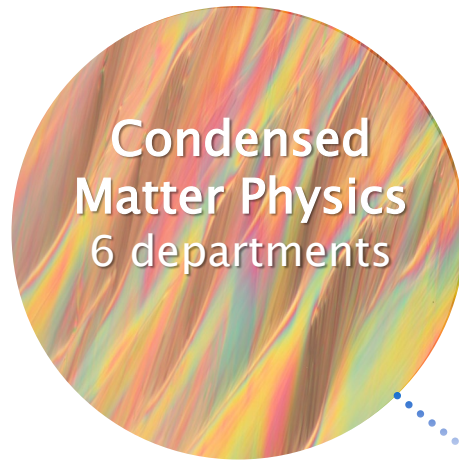


# FZU History

- pre-history in 1930s – department at Charles University, Institute of Technical Physics
- officially established in 1954 as part of the Czechoslovak Academy of Sciences
- 1979 – merged with the Institute of Solid State Physics (Cukrovarnická) and became the largest institute of the Academy
- After the Velvet revolution (1989) – reduction in size to about 60%
- 2007 – public research institution established
- 2015 – laser centres (ELI Beamlines and HiLASE) opened in Dolní Břežany

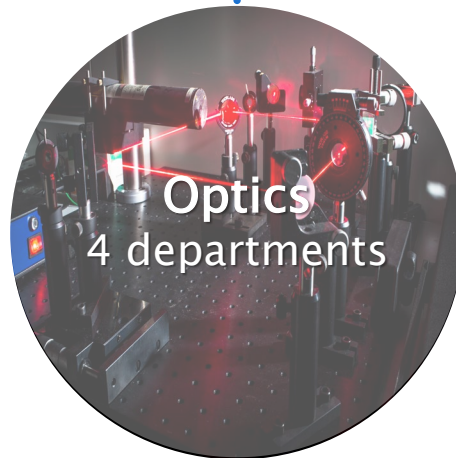
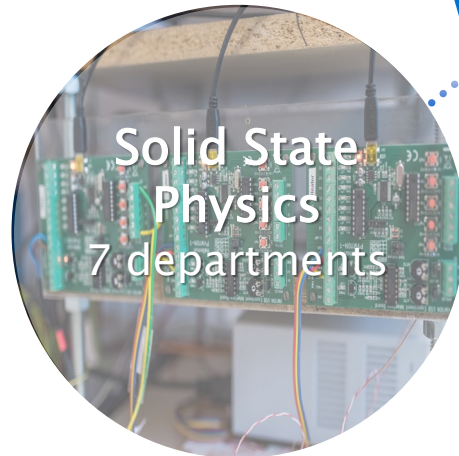
# FZU Structure

(March 2021)



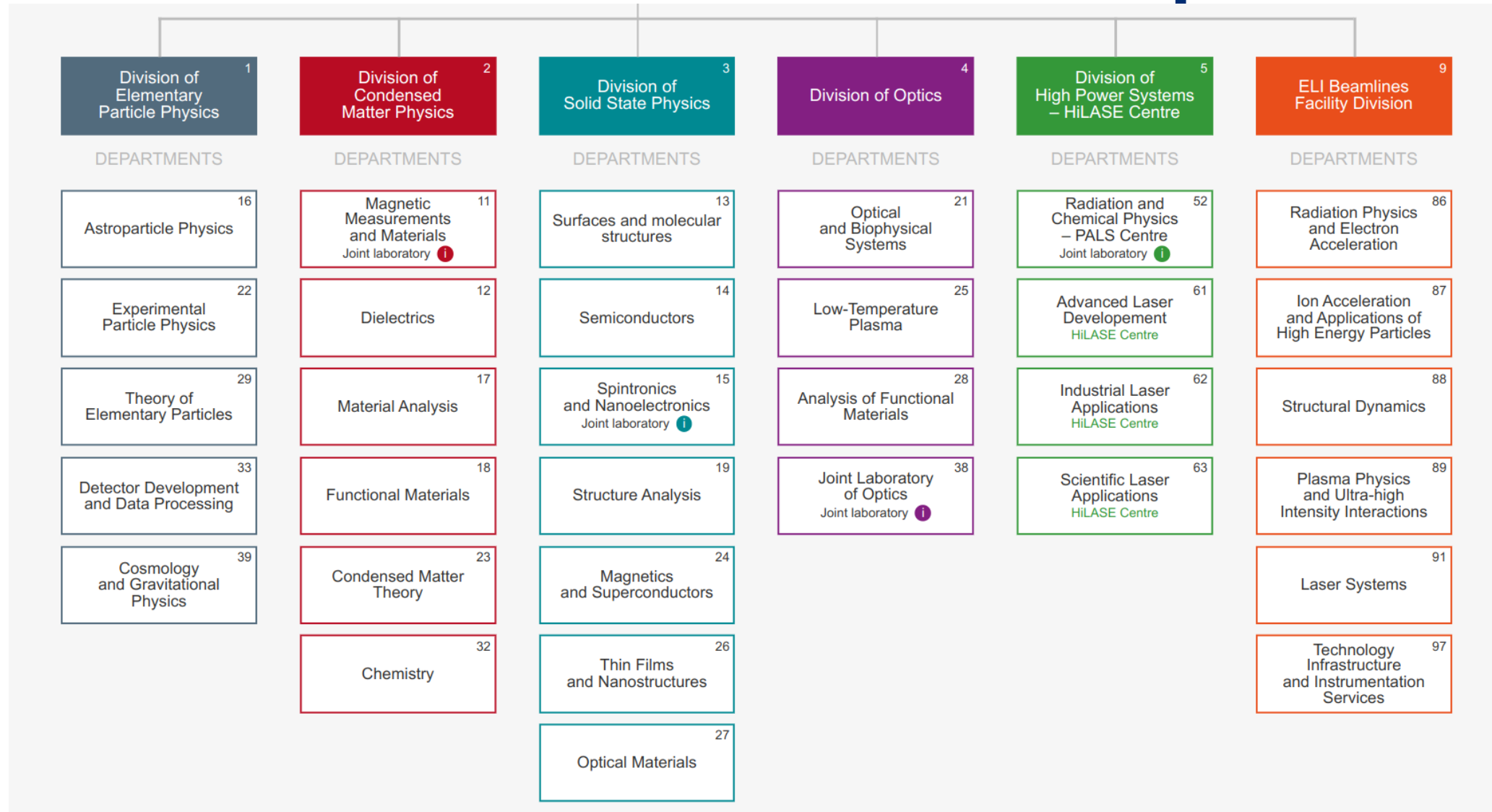
6 scientific divisions  
with 32 departments

+

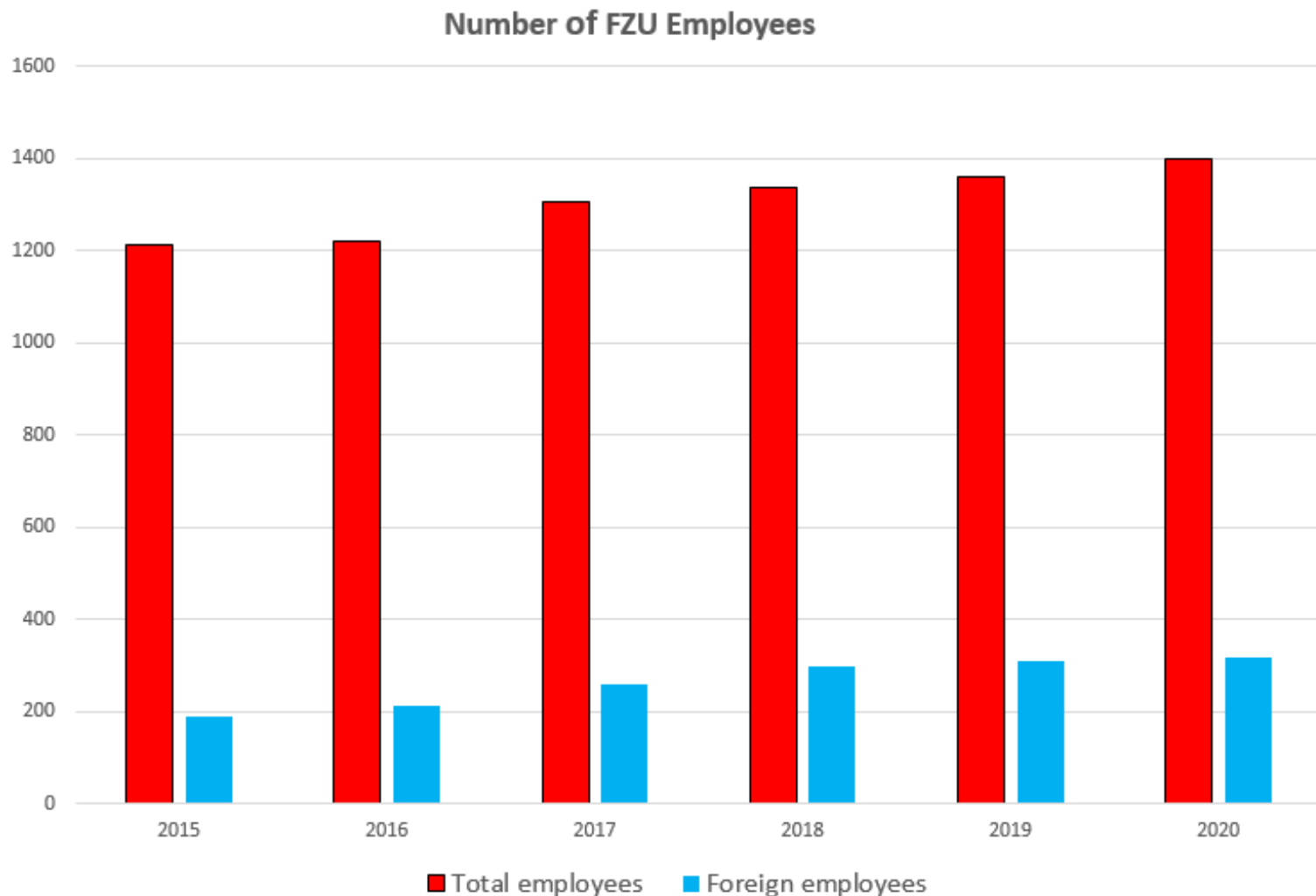




# Detailed structure of research departments



# FZU Growth and Internationalization

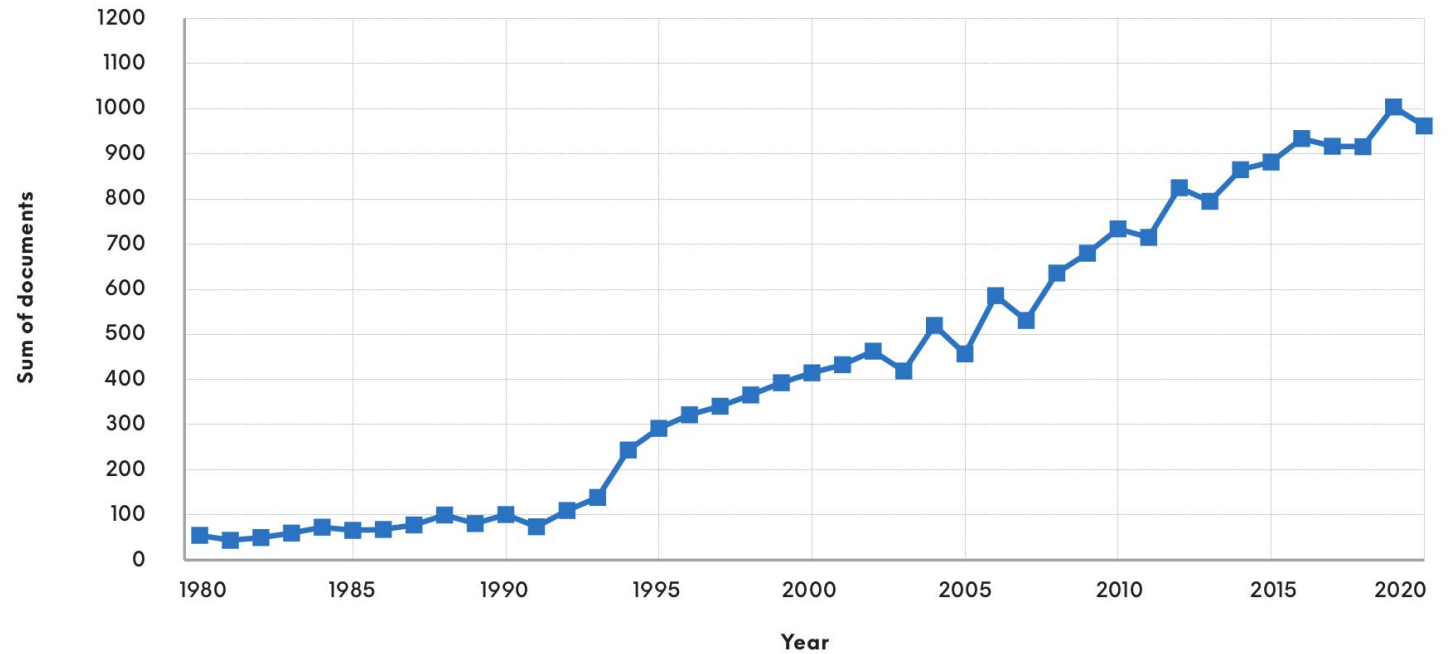


- 2015 – 2020
- 15% increase in number of employees
- 68% increase in number of foreign employees

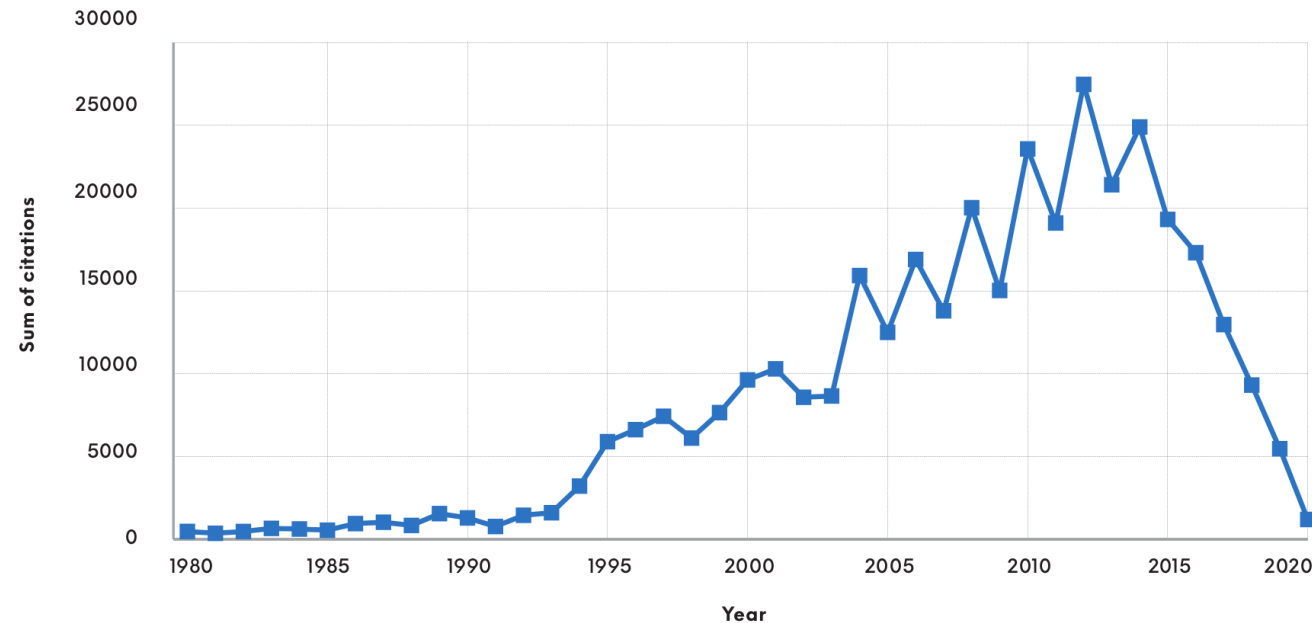


# FZU Publications

Number of papers per year



Number of current citations  
for the papers from the given  
year



# Large Research Infrastructures (LRIs)

- official definition:  
*“research infrastructure, which is a research facility necessary for comprehensive research and development with high financial and technological intensity, which is approved by the government and established for use by other research organisations”*
- a large research infrastructure is **a unique facility with both national impact and international overlap**
- **it must fulfil the criteria of the “open access” to its capacities**
- **MEYS** (Ministry of Education, Youth and Sports) supports, approves and coordinates LRIs



# Large Research Infrastructures

- extensive website:

<https://www.vyzkumne-infrastruktury.cz/en/>

The screenshot shows the homepage of the Large Research Infrastructures website. At the top left is the logo, a green hexagon with a white circle inside, followed by the text "LARGE RESEARCH INFRASTRUCTURES". To the right, it says "supported by the Ministry of Education, Youth and Sports of the Czech Republic". Below this is a dark green navigation bar with white text: "Newsletter", "Strategy", "National Roadmap", "ESFRI", "ESFRI White Paper", "ERIC", "Horizon Europe", and "International R&D organisations". A second, lighter green bar contains "Physics and engineering", "Energy", "Environment", "Health and food", "Social sciences and humanities", and "e-Infrastructures". The main content area features a large blue banner for the "INTERNATIONAL CONFERENCE ON RESEARCH INFRASTRUCTURES" in Brno, Czech Republic, from October 19-21, 2022. To the right of the banner is a search bar with a magnifying glass icon and a "Languages" dropdown menu currently set to "Česky". Below the banner are three buttons: "News from Ministry", "SARS-CoV-2 / Covid-19", and "Jobs". At the bottom, there are two images: one of a book titled "CLARIN THE INFRASTRUCTURE FOR LANGUAGE RESOURCES" and another of a presentation slide about EuroHPC quantum computers, listing participating countries: Czechia, France, Germany, Italy, and Poland.

## News

- Čeští vědci ocenění na konferenci výzkumné infrastruktury CLARIN ERIC  
Výzkumné infrastruktury | 13. 10. 2022
- Workshop on Single Cell Proteomics  
CIISB | 13. 10. 2022
- Naše technologie poprvé propojí na dálku dva  
pěvecké sbory  
CESNET | 12. 10. 2022
- Instruct-ERIC Webinar Series: Structure Meets  
Function on 12 October 2022  
CIISB | 12. 10. 2022

# National Roadmap of LRIs

- strategy document of the Czech Republic, which presents the policy-making approach of the Czech Republic to the large research infrastructures
- national roadmap is the Czech equivalent to the **Roadmap of European Strategy Forum on Research Infrastructures (ESFRI)**
- the Czech contribution to the landscape of research infrastructures constructed and operated in Europe and worldwide
- editions and updates: 2010, 2011, 2015, 2019 (and the next one planned for 2023)

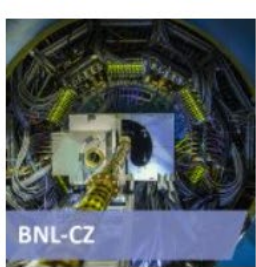


# Roadmap Structure

- Physical sciences and engineering
- Energy
- Environmental sciences
- Health and food / biological and medical sciences
- Social sciences and humanities / social and cultural innovations
- e-Infrastructures/ digital research infrastructures



AUGER-CZ



BNL-CZ



CEMNAT



CEPLANT



CERN-CZ



CTA-CZ



CzechNanoLab



ELI Beamlines



ESS Scandinavia-CZ



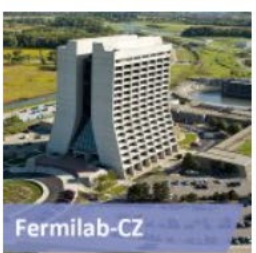
EST-CZ



EU-ARC.CZ



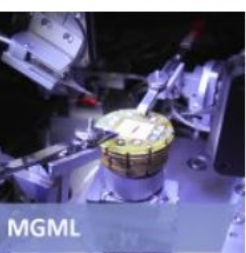
FAIR-CZ



Fermilab-CZ



LSM-CZ



MGML



PALS



SPIRAL2-CZ



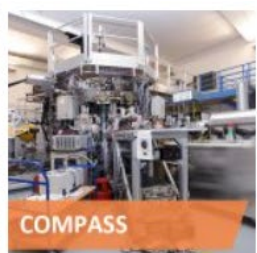
SPL-MSB



VdG



CATPRO



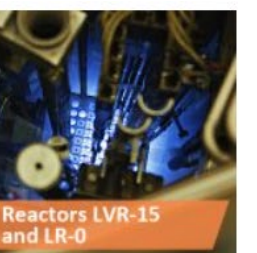
COMPASS



ENREGAT



JHR-CZ



Reactors LVR-15 and LR-0



WCZV



**FZU**

Fyzikální ústav  
Akademie věd  
České republiky





ACTRIS-CZ



CENAKVA



CzeCOS



NanoEnviCz



RECETOX RI



BBMRI-CZ



CCP



CIISB



CZECRIN



Czech-BioImaging



e-INFRA CZ



CZ-OPENSREEN



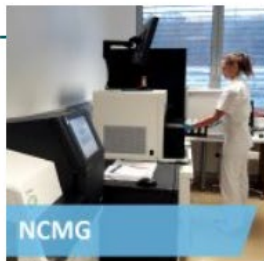
EATRIS-CZ



ELIXIR-CZ



METROFOOD-CZ



NCMG



AIS CR



CLB



CNC



CSDA



ESS-CZ



LINDAT/CLARIAH-CZ



SHARE-CZ



**FZU**

Fyzikální ústav  
Akademie věd  
České republiky

# LRI – financing scheme

- Operational budget – 7-year cycle, based on the results of international evaluation (interim and final reviews)
- Investment budget – use of Structural/Operational Programmes (OP VVV, OP JAK), competitive
- Unfortunately, currently is the system in crisis
- Requirements for the next cycle (2023-2029) grew significantly, budget was not approved
- Operational budget cut down to 75% (excellent LRIs), 60% or 0% (new LRIs) – approved just for 2023, future is unsure