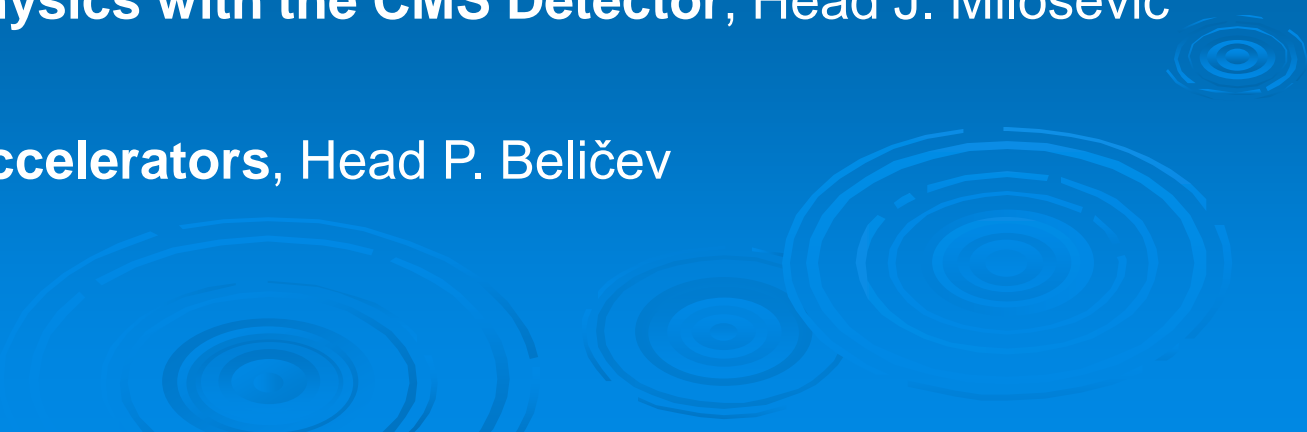


Laboratory of Physics, Vinča Institute of Nuclear Sciences, University of Belgrade, Serbia

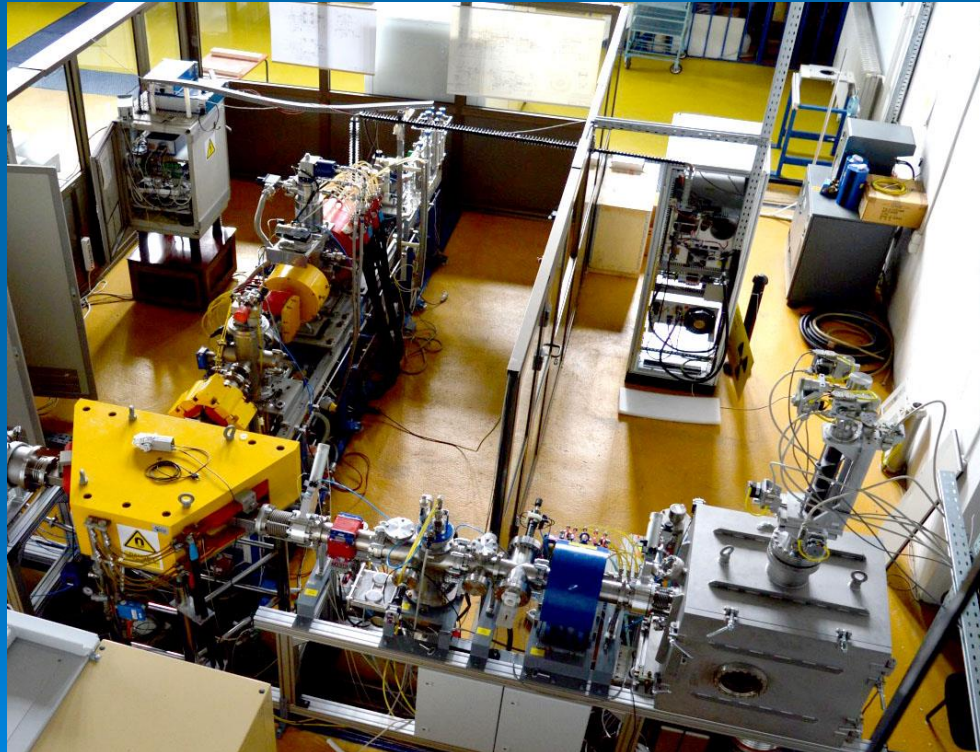
- **Physics and Detector Research and Development in High Energy Physics Experiments, Head I. Božović-Jelisavčić**
 - **High Energy Physics with the CMS Detector, Head J. Milošević**
 - **Science with Accelerators, Head P. Beličev**
- 

International collaboration

- **European Organization for Nuclear Research (CERN), Geneva, Switzerland**
- **Joint Institute for Nuclear Research (JINR), Dubna Russia**
- **Two HORIZONT 2020 projects**
- **Several coordination action (COSTS) funded by the European Commission and bilateral projects funded by the Serbian MESTD**
- **Coordinators in collaboration agreements between the Vinča Institute and Institute of High Energy Physics of the Chinese Academy of Science, Institute of Nuclear Physics, NCSR “Demokritos”, Athens, Greece**
- **Application of FAMA as a Partner Facility within CERIC**

Ion Beam Modification of Materials (IBMM) with FAMA

- FAMA is a user facility for basic and applied research in the field of modification and analysis of materials with ion beams. It was commissioned in May 1998
- Modification of Materials part: ECR plasma source of multiply charged ions (M1 machine) and two implantation channels, C1 and C2



M1 machine and C1 channel

Ion species	Ion energy (keV)	Ion current (εμA)
$^1\text{H}^+$	15	120
$^2\text{H}^+$	18	80
$^4\text{He}^+$	15	760
$^{11}\text{B}^{3+}$	45	305
$^{12}\text{C}^{2+}$	30	230
$^{14}\text{N}^{5+}$	100	733
$^{16}\text{O}^{5+}$	75	660
$^{20}\text{Ne}^{5+}$	75	560
$^{40}\text{Ar}^{8+}$	160	720
$^{56}\text{Fe}^{7+}$	105	79
$^{64-68}\text{Zn}^{7+}$	105	77
$^{84}\text{Kr}^{12+}$	180	135
$^{136}\text{Xe}^{23+}$	460	62
$^{180}\text{Hf}^{12+}$	180	43

Ion Beam Analysis of Materials (IBA) with FAMA



Cyclotron 1-3 MeV protons. Phase one commissioned – beam of 10 μA delivered at the faraday cup. Second phase: C6 channel - RBS, RBS/C, EBS, EBS/C, NRA, PIXE and PIGE in the vacuum, C7 channel - PIXE and PIGE in the air