

Academic supervisor:

Paolo Bettini

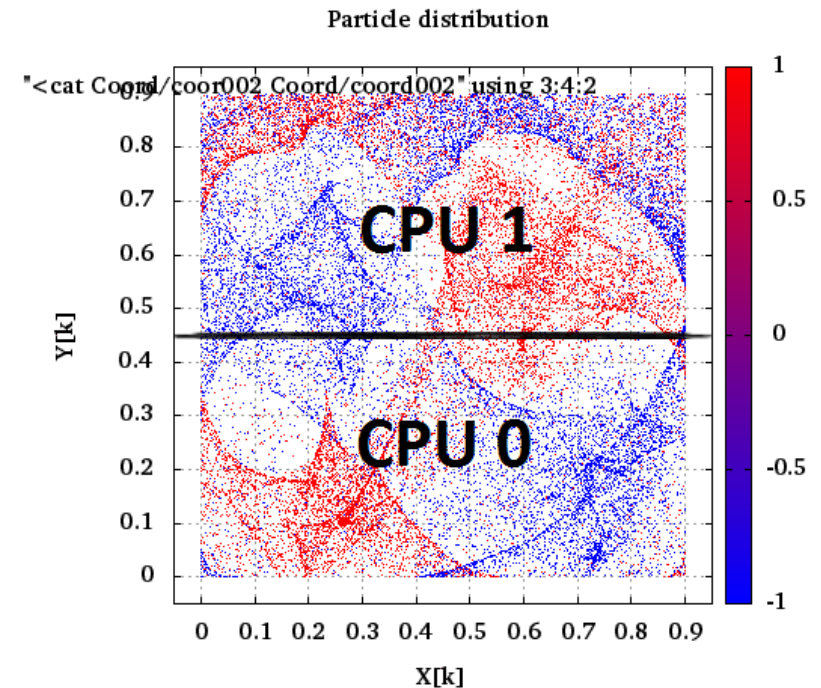
RFX supervisor:

Gabriele Manduchi

Current aim of the work:

studying various hardware architectures and learning code parallelization

- **PIC code: serial and parallel version being developed**
- **PIC method**
- **MPI parallelization**



Remaining work:

hybrid programming (+OpenMP), GPU extention (Cuda C), universal framework

# Diego Michelotto

ESC 14

# Me

- Graduated in Computer Science at the University of Ferrara in 2011
- I work at the INFN for the CNAF section, in Bologna from 2011
- I'm member of the R&D Operations group

# What I Did and Do

- I have developed for Italian NGI a General purpose Portal for the easy access to Grid and cloud resources.
- Now I'm involved into StoRM and VOMS developers team

Thanks

# ESC14

## Davide Pedretti

Electronics Engineer at INFN - LNL

---

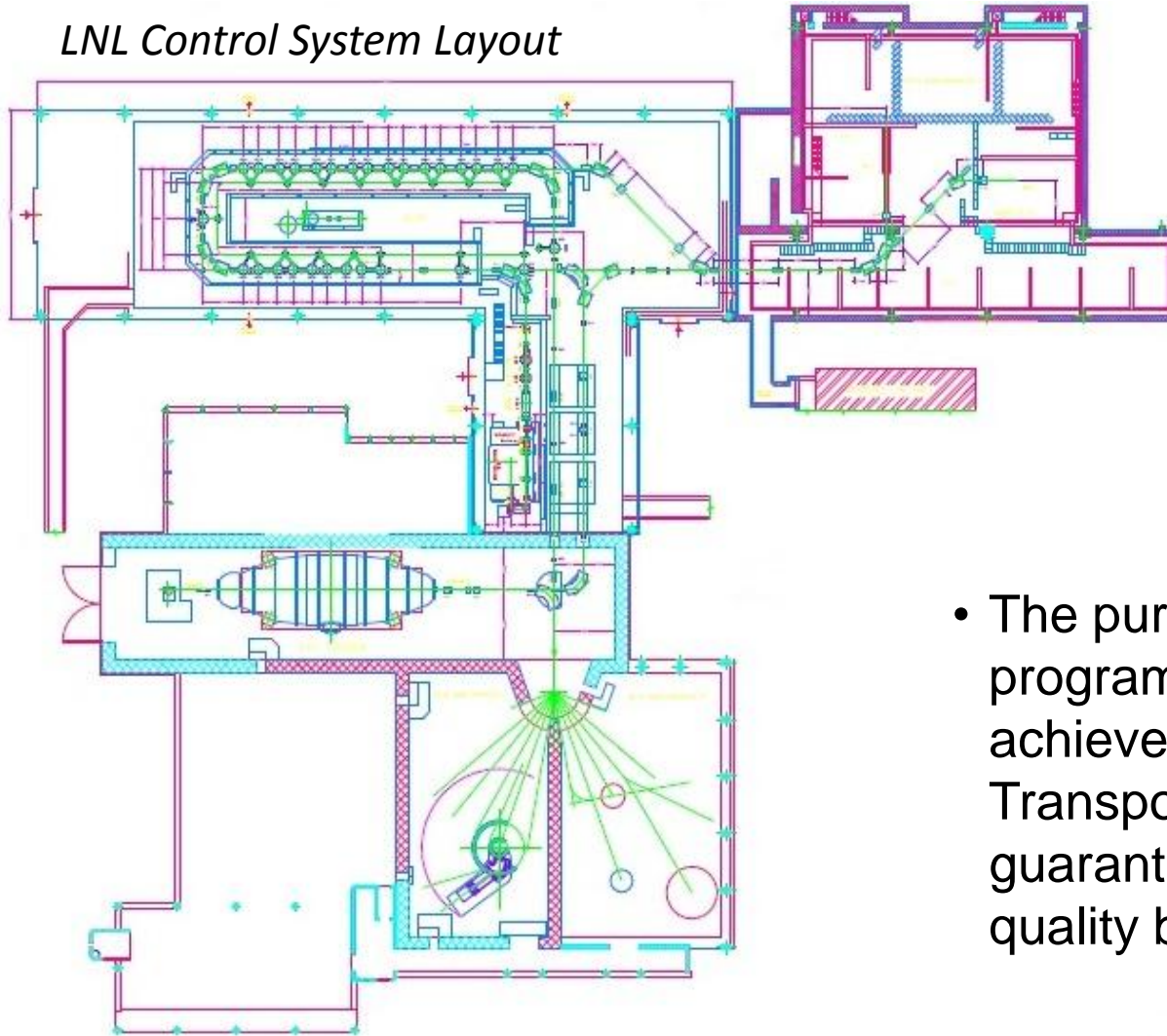
*Control systems for the accelerators of the SPES project.  
Design of a microprocessor-based Input Output Controller.*

# IOC overview

- It consists in a custom COM Express carrier board and it is the basis on which to build an Embedded Computer System.
- The IOC development is aimed to provide almost all the peripherals needed in the control system of a big physics facility.
- State of the art:
  - The HW architecture has been finalized.
  - Starting to develop the firmware and the software support for all the on board peripherals.
- An IOC represents a local intelligent node in the control system network. We can develop an application specific database for each IOC installed in the complex in order to monitor the relevant process variables.

# IOC – Automatic Beam Transport System

*LNL Control System Layout*



- IOC are autonomous computational entities which are part of a **distributed computing system**.

- The purpose of the distributed programming process is to achieve an Automatic Beam Transport System which guarantees a stable and of quality beam.