INFN interest in collaborating to PID for EIC@IP6 → divisions of **Bari, Bologna, Catania, Ferrara, Frascati, Roma, Trieste**

- **which are the contributions you can bring to the PID activity towards the proposal in the next months**
  - advance with **Monte Carlo simulations** for performance studies of a forward RICH detector
    - benefit from existing GEANT4 simulation experience and results (eRD14 dRICH)
    - bring forward RICH PID in context of analytical and parametrised approaches for fast-simulation
    - moving towards implementation of geometry / algorithms for full simulation / reconstruction
  - continue detector **R&D on dual-radiator RICH** detector prototype, photodetectors and electronics
    - SiPM irradiation campaign in May and characterisation for radiation-hardness
    - development of timestamp-based FE electronics with streaming-readout capabilities
    - beam tests of the dRICH prototype at CERN in Sep/Oct (though timeline might not fit with the one of proposal)
  - continue **R&D on MPGD-based photodetectors** for RICH in windowless approach
- **what are the most relevant and urgent questions in the PID sector**
  - need to have a clearer idea of global EIC@IP6 Monte Carlo **simulation strategy** and combined PID
  - identification of suitable visible-light **photodetectors** for operation in B field and moderate radiation
    - investigating the SiPM option, but important have a plan-B available → LAPPD
- **how do you see globally PID for Detector 1**
  - we believe EIC@IP6 should perform a critical **analysis of PID systems**
    - i.e. TPC / TOF in the barrel of the reference detector (synergic TOF - dE/dx combination for low p_T PID)
  - invest more studies on the use of **multiple (combined) PID information** across the experiment
    - i.e. electron ID via combined use of RICH + TOF + ECAL
  - further **engineering evaluation** of the PID systems and the volumes