BACKGROUND

EDUCATION:

- *1994*: Degree in Physics @ Università degli Studi di Milano, Milan

EXPERIENCE:

- *12/1994 – 01/1995*: Collaboration at National Institute for Nuclear Physics (INFN)
- *09/1995 – 09/1997*: Fellowship at INFN
- *09/1997 – 02/1998:* Fellowship at National Institute for Matter Physics (INFM)
- *03/1998 – 04/1998*: Collaboration at National Institute for Nuclear Physics (INFN)
- 05/1998 – *05/2001:* Scientific Associated at DESY
- 06/2001 – *01/2008:* Temporary position as researcher at INFN
- *02/2008 – 12/2019*: Research at INFN
- **01/2020 – *now: Senior researcher at INFN***

HOME INSTITUTION: ***Istituto Nazionale di Fisica Nucleare, Laboratorio di Acceleratori e Superconduttività Applicata (LASA), Milan, Italy***

EAJADE Experience

TASKS: *WP2, Tasks 2.1 and 2.3*

Period:

- *07/04/2024 – 14/04/2024* @JLAB
- *15/04/2024 – 20/04/2024* @FERMILAB

Task 2.1: Plasma processing

- @**JLAB**:
  - Discussion on the principles of the techniques with particular attention to our need of applying it with our Vertical Test configuration. Exchange know-how on e.m. simulations dedicated to plasma cleaning.
  - Hands-on on JLAB setup. Real time experience on a 1.3 GHz 7-cell cavity.
  - Discussion on related diagnostic and operation of the system.
- @**FERMILAB**:
  - Discussion about their plasma processing method/experience.
  - Mode simulations for Low Beta cavities to be ported to 1.3 GHz cavities.
  - Feasibility evaluation of a plasma processing on a cavity equipped with HighQ antennas

@LASA:

- First ignition of plasma in collaboration with FNAL in June 2024 on a ESS cavity with highQ antenna.

Task 2.1: Data acquisition system @FERMILAB

FNAL has a long term experience on developing and using digital based system for the measurement of SRF cavity at cryogenic temperature. A very valuable interaction with FNAL experts has been achieved that has allowed to succesfully implement, with dedicated modifications, their approach into our new RF digital acquisition system.

- Digital control of a SC cavity implemented in our test stand at LASA

Task 2.3: Diagnostics + magnetic hygiene @JLAB & @FERMILAB

Diagnostic for cavities in HighQ/HighG are essential tools to understand the behavior of these components and improve their performances. Both labs have a long experience on thermal measurements, magnetic field compensation and RF measurements. In particular, FNAL has provided us very valuable information for improve the dynamic range of our setup towards by implementing low noise component in the RF chain.

- Improvement on RF parameters measurements during cavity cooldown and magnetic compensation during VT test.

WP4 (Task 4.3): ERL @JLAB

First approach with JLAB people on their experience on assembly and operation of their ERL. Detail discussion on their high average source electron source, their approach toward management of high voltage components and electron beam dynamics. Very useful hands-on on components design, preparation, and assembly.

- Know-how transfer to our electron source that is being built at LASA in the context of our activities towards a small ERL.