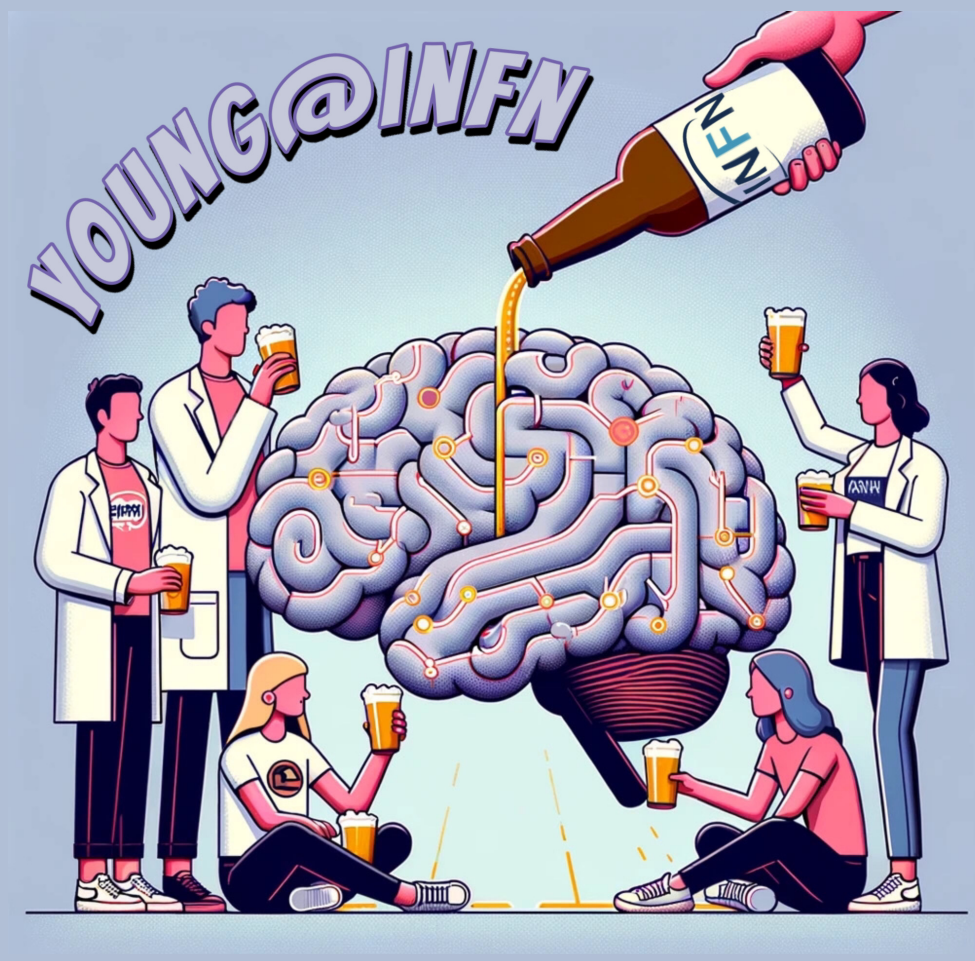
Sala Direzione INFN (II floor Marconi) 27 March 16:30

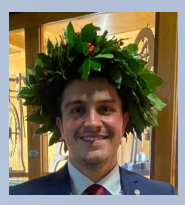
Young@INFN is a series of seminars on the various topics in which our groups are active, held by PhD students, post-docs, and young researchers. The target for the seminars are early career scientists, who can interact with the youngest in our staff to get a feeling of what their research is about and get to know the people who work in our department. See you there!

Oh, and there's gonna be beer!



HL-LHC Challenges: Physics & Technology

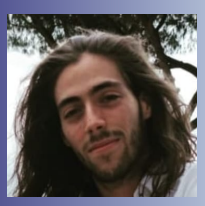
Unveiling the Higgs Potential: Chasing the Double Higgs Signal



Marco Del Vecchio
marco.del.vecchio@cern.ch

THE DISCOVERY OF THE HIGGS BOSON IN 2012 OPENED THE PATH TO PRECISION STUDIES OF THE HIGGS SECTOR. A KEY OPEN QUESTION IS THE SHAPE OF THE HIGGS POTENTIAL, ESPECIALLY THE TRILINEAR SELF-COUPLING, WHICH REMAINS UNMEASURED. THIS COUPLING IS CRUCIAL IN DOUBLE HIGGS (HH) PRODUCTION, A RARE PROCESS HIGHLY SENSITIVE TO BEYOND STANDARD MODEL EFFECTS. THIS TALK WILL COVER THE THEORETICAL MOTIVATION, THE MOST PROMISING DECAY CHANNELS.

Triggering the Future: Fast Muon Detection for the HL-LHC Era



Lorenzo Corazzina
lorenzo.corazzina@cern.ch

TRIGGER SYSTEMS PLAY A CRUCIAL ROLE IN HIGH-LUMINOSITY EXPERIMENTS, AS THEY FORM THE FIRST STAGE IN THE DATA ACQUISITION CHAIN—FROM DETECTORS TO PERMANENT STORAGE—BY SELECTING THE MOST RELEVANT EVENTS IN REAL TIME. FOR THE PHASE-2 UPGRADE, THE ATLAS LEVEL-0 MUON TRIGGER WILL EXPLOIT POWERFUL FIELD-PROGRAMMABLE GATE ARRAYS (FPGAS) TO EXECUTE FAST AND EFFICIENT TRIGGER ALGORITHMS. THIS TALK WILL PROVIDE AN OVERVIEW OF THE ATLAS PHASE-2 UPGRADE OF THE L0 MUON BARREL TRIGGER, IN PREPARATION FOR THE HIGH-LUMINOSITY LHC (HL-LHC), WITH A FOCUS ON ONE OF THE PROPOSED CANDIDATE ALGORITHMS: PATTERN MATCHING.