Working Group 3 (WG3) on Machine Learning for Advanced Control Techniques

- Goals
  - Explore the **use of Machine Learning techniques** in the **control and noise mitigation strategies** of scientific experiments, specifically for Gravitational Wave detectors
  - **Develop Machine Learning algorithms** as part of detectors' feedback-control systems as well as for the feed-forward cancellation of noise
- Activity
  - WG3 meets on Zoom on the **last Friday of every month, at 14:00 CET**
  - WG3's online workshop, March 22-23, 2021: https://indico.ego-gw.it/event/172/
  - WG3's training school, June 2021, Turku, Finland (in preparation)
  - WG3 email: wg3-g2net@ego-gw.it
- Tasks
  - • Laser cavity control to optimise locking time and stability
    • ML for glitch removal
    • Deep learning for noise removal
    • Newtonian noise cancellation with ML
    • Data pre-processing with reinforcement learning
- Members
  - 23 researchers from Italy, Germany, France, Ireland, Netherlands, Finland, Poland, Cyprus, Slovakia, Romania , US

Leaders --> Luigia Petre (lpetre@abo.fi) and Andrea Chincarini (andrea.chincarini@ge.infn.it)