



ESCAPE

European Science Cluster of Astronomy &
Particle physics ESFRI research Infrastructures

Partner Final report for INFN

Cristiano Bozza - UNISA & INFN - 30/11/2022



● INFN involved in Task 3.3 (CASS)

– ~ 4+ persons: C. B., L. Fusco^(*new) B. Spisso, S. M. Stellacci, D. Zito

● Lead

● ConCORDIA (onboarded) development

- Web GUI
- Scripting interface
- DIRAC interface
- KM3NeT-provided containers
- Performance benchmarks on KM3NeT containers

● Benchmark of CORSIKA speedup options



● INFN secondary involvement in Task 3.4

- ~ 4 persons: C. B., A. Martini, B. Spisso, S. M. Stellacci
 - Limited time sharing
- pLISA evolution (library for astroparticle identification and study)
 - Migration to OrcaNet (done)
 - Comparing Convolutional NN and Graph NN
 - More results for vertex detection and neutrino direction
 - Active in Global Neutrino Network machine learning group
 - Not ready yet for onboarding
 - Planned to restart in next months



● Expectations from OSSR

● Task 3.3:

- Initial goals achieved
- Long-term support for CORSIKA-related tasks
- Gaining expertise for setting up and operating DIRAC (and ESAP) in INFN computing centres

● Task 3.4:

- Hope to get more HR to complete goal of providing pLISA on EOSC
 - From OSSR: mostly motivation and visibility



● Outlook for cooperation

● Cosmic ray simulation

- Link to CTA established for common discussion, evaluation and developments
- DIRAC + ESAP in INFN computing centres

● Machine Learning

- Get ready pLISA for EOSC onboarding
- Use pLISA to join multimessenger analysis

