

EPIGRAPHY

Edge dee**P** learn**InG** fo**R** p**Article** **PHYS**ics

November 2025 - October 2029

[CA24153](#)

Brief advertisement :)

What is COST?

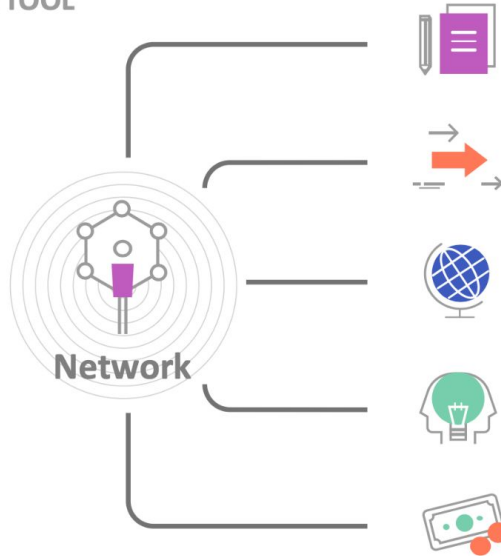
COST Actions

AN EFFICIENT NETWORKING TOOL

COST provides funding

for research coordination and capacity building activities

COST does not fund research, but pools resources to achieve research results by networking



Memorandum of Understanding

4 years

Average 30 countries in H2020

Research coordination and capacity building activities

~ €600,000 over lifetime

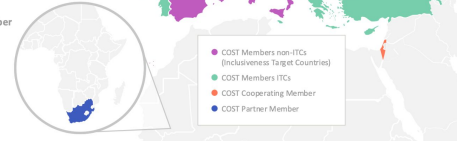
COST Membership

41 Full COST Members

- | | | |
|--------------------------|-----------------------------------|------------------|
| ● Albania | ● Germany | ● Norway |
| ● Armenia | ● Greece | ● Poland |
| ● Austria | ● Hungary* | ● Portugal |
| ● Belgium | ● Iceland | ● Romania |
| ● Bosnia and Herzegovina | ● Ireland | ● Serbia |
| ● Bulgaria | ● Italy | ● Slovakia |
| ● Croatia | ● Latvia | ● Slovenia |
| ● Cyprus | ● Lithuania | ● Spain |
| ● Czech Republic | ● Luxembourg | ● Sweden |
| ● Denmark | ● Malta | ● Switzerland |
| ● Estonia | ● The Republic of Moldova | ● Türkiye |
| ● Finland | ● Montenegro | ● Ukraine |
| ● France | ● The Netherlands | ● United Kingdom |
| ● Georgia | ● The Republic of North Macedonia | |

1 Cooperating Member
● Israel

1 Partner Member
● South Africa

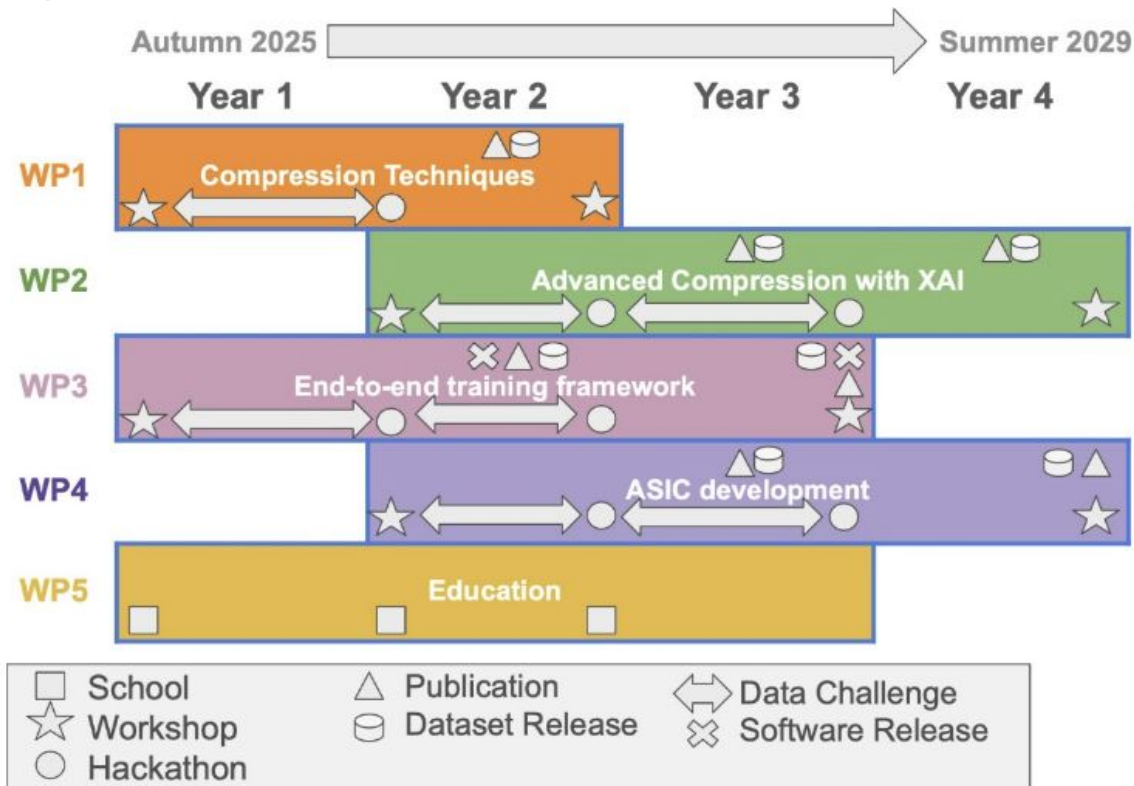


EPIGRAPHY

Description

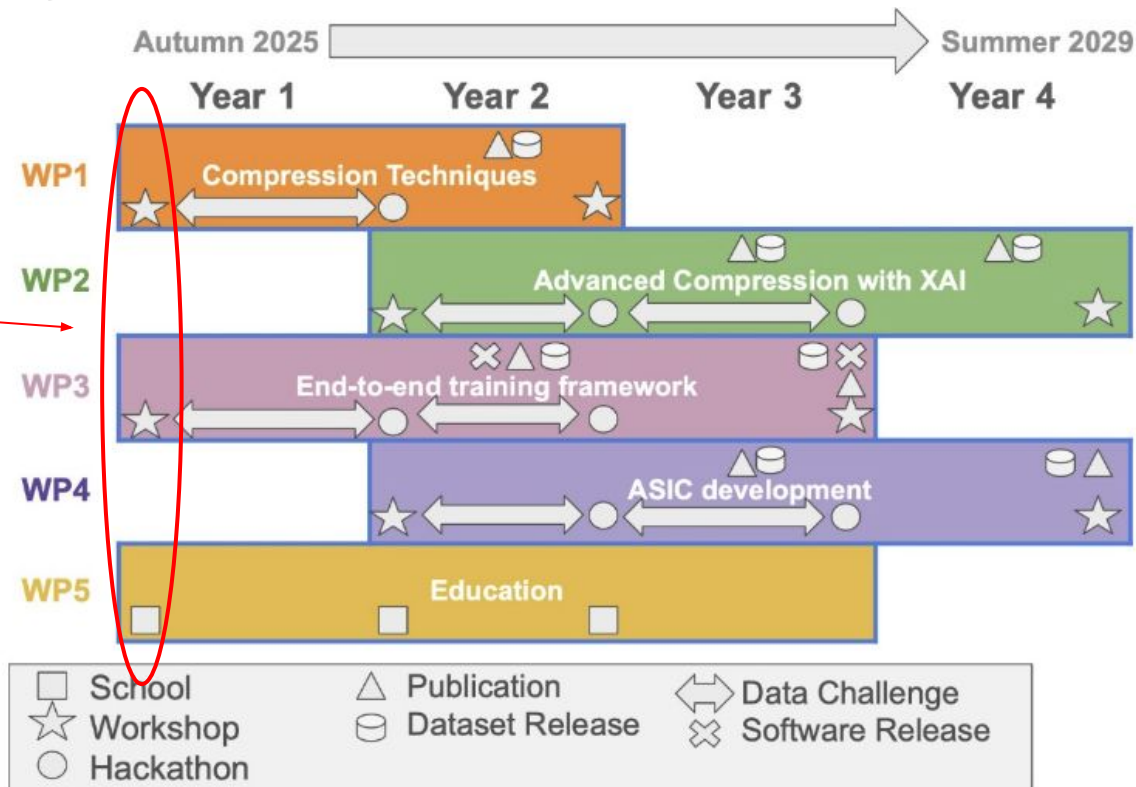
Deep Learning applications are becoming ubiquitous in science. Particle physicists in particular are relying more and more on neural networks for crucial tasks in their data processing. Often, they are confronted with unique technological challenges, such as the need to operate deep neural networks in real time and in extreme computing environments, such as the event filtering systems of the experiments at the Large Hadron Collider. Low latency and reduced computing resources imply strong constraints for the algorithms operated on-edge, i.e., as close to the detector as possible. To take advantage of the power of deep learning under these conditions, one needs to develop compression techniques and make the networks efficient without losing their expressivity. This COST action aims at gathering researchers across Europe interested in this challenging problem, to advance AI-powered on-edge inference for next-generation particle physics experiments like the High Luminosity LHC and future colliders. Through the technological advancements envisioned, many other fields and sectors relying on fast AI-based decision making and on-edge computation such as smartphones, automotive, portable medical devices, drones, or satellites may too profit from our initiative on Edge deeP learning foR pArticle PHYsics, EPIGRAPHY.

Five Working Groups



Five Working Groups

First event:
Integrated
school+workshop,
probably in Portugal &
January 2026



Levels of involvement

1. Subscribe to e-group cost-epigraphy
→ <https://e-groups.cern.ch/e-groups/EgroupsSubscription.do?egroupId=10681732>
2. Become a member of the Working Groups
→ Main entry ticket to profit from \$\$ resources, apply [online](#)
→ Members from non-COST countries can only get reimbursed **once** over 4 years
3. Become a member of the Management Committee
→ 2 per country, many countries filled already
4. Assume a leadership role
→ Filled most of roles already, still looking for: Science Comms Coordinator, Training Coordinator, Equity & Inclusiveness Advisor, Young Researcher Council Rep

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Reach out if you're interested!