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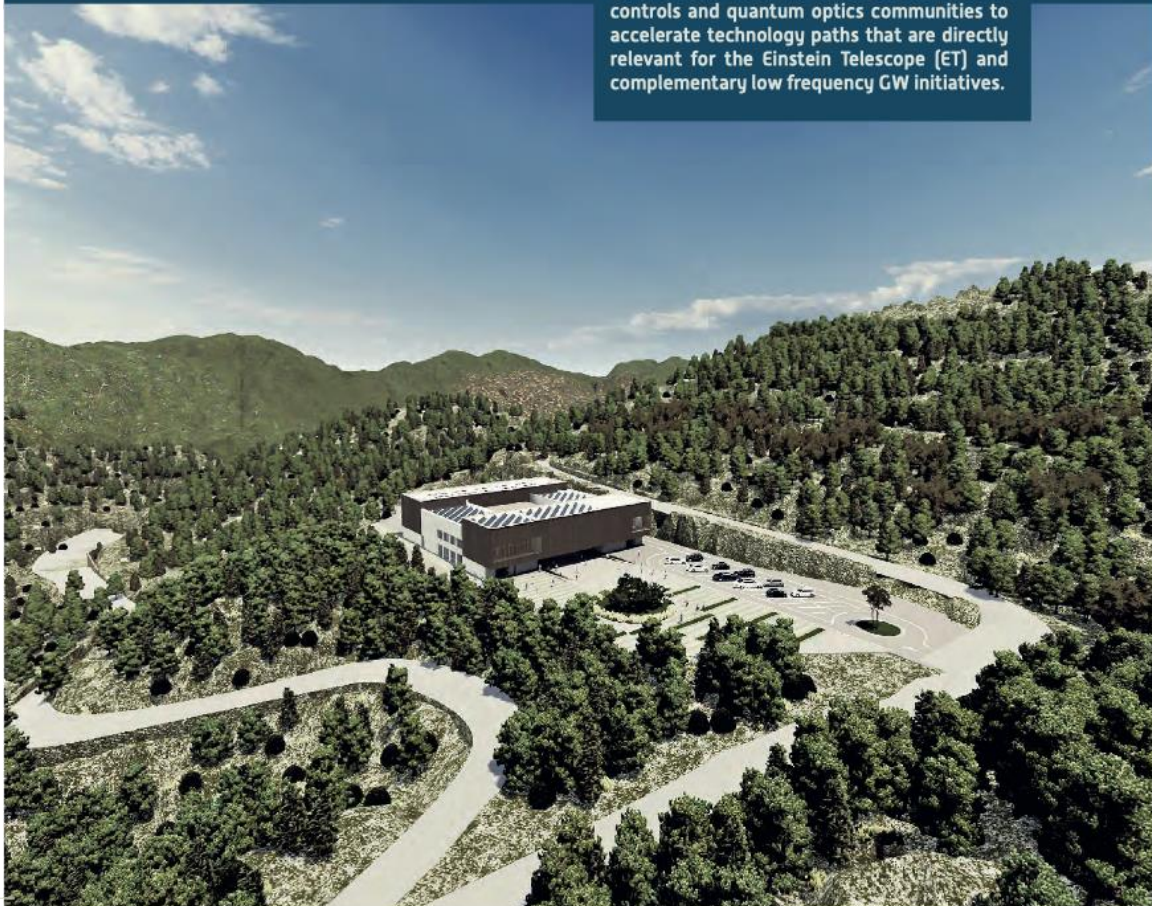
# ET ITALY Einstein Telescope

The Einstein Telescope project and beyond: science and technology for future gravitational wave detectors

May 4-5, 2026

*KTH Royal Institute of Technology  
Stockholm*

This meeting brings together scientists working on science and technology of gravitational wave detection projects e.g. the controls and quantum optics communities to accelerate technology paths that are directly relevant for the Einstein Telescope (ET) and complementary low frequency GW initiatives.



**This meeting brings institutional representatives together with researchers working on S&T of gravitational wave (GW) detection projects that are directly relevant for the Einstein Telescope (ET) and complementary low frequency GW initiatives. A round table discussion to promote the expansion of the ET European Consortia will conclude the workshop.**



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# The Einstein Telescope project and beyond: science and technology for future gravitational wave detectors

Royal Institute of Technology, KTH Campus  
Stockholm May 4-5, 2026

Co-organized by Embassy of Italy in Sweden

<https://the-einstein-telescope-project>

May 4, 2026 - KTH #4204, Albanovägen 29, 114 19 Stockholm

<https://www.kth.se/form/et-stockholm>

## 09:00 – 09:15 Opening Remarks

Vaishali Adya (KTH) and Augusto Marcelli (Embassy of Italy)

## 09:15 to 12:30 Session 1 Chair Hilma Karlsson (KTH)

*Squeezed light sources, technology enablers for future gravitational wave detectors*

**09:15-09:40** Daniel Voigt (KTH) and Vaishali Adya (KTH)

*Stray light in waveguide-based squeezed light sources for third-generation gravitational wave detectors*

**09:40-10:05** Antonio Perreca (Gran Sasso Science Institute)

*Active Wavefront Control and Sensing for the Einstein Telescope*

**10:05-10:30** Carlota Canalias (KTH)

*Engineering and Programming Nonlinear Interactions in KTP for Quantum Light Generation*

## 10:30-10:45 coffee break

## Session 2 Chair Erik Svanberg (KTH)

*Technology enablers for future gravitational wave detectors and fundamental physics experiments*

**10:45-11:10** Johannes Eichholz (University of Birmingham)

*Optical Coatings for Future Gravitational Wave Detectors*

**11:10 - 11:35** Giacomo Ciani (Trento University)

*Clean detections need a clean detector: stray-light noise from dust contamination in GW detectors.*

**11:35 – 12:00** Witlef Wieczorek (Chalmers tekniska högskola)

*Fundamental experiments with magnetically levitated superconducting microparticles*

**12:00 – 12:25** Nils Engelsson (Chalmers tekniska högskola)

*Ultralow dissipation nanomechanical resonators for sensing and quantum optomechanics*

## 12:30–14:00 Group photo of participants followed by light lunch

## 14:00 to 17:00 Session 3 Chair Antonio Perreca (Gran Sasso Science Institute)

*Fundamental physics experiments and future gravitational wave detectors*



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**14:00-14:35** Magdalena Zych (Stockholm University)

*Testing the interface of Quantum Theory and Gravity with atoms and light*

**14:35-15:10** Sofia Qvarfort (Stockholm University)

*Measuring gravitational acceleration with large-mass quantum resonators*

**15:10-15:45** Andrea Perali (University of Camerino)

*Superconducting Technologies for the Lunar Gravitational Wave Antenna (LGWA): actuators and sensors.*

**15:45-16:00** --> *coffee break*

**16:00-16:45** *Round table discussion*

**Chair(s) Vaishali Adya (KTH)**

Are the technologies we have for future gravitational wave detectors state of the art?

What do we need and how do we get there?

Where we are with Infrastructure, fibers, waveguides, nonlinear crystals, coatings, use of AI for control system design, deep loop shaping, etc.

**17:00** *Squics Lab tour or NanoLab tour (approx. 20 min)*

**May 5, 2026 – KTH, Gradängsalen, Teknikringen 1, 114 19 Stockholm**

<https://www.kth.se/form/et-stockholm>

**09:15 – 09:30** **Opening Remarks**

Vaishali Adya (KTH) and Augusto Marcelli (Embassy of Italy)

Mikael Lindström (Vice President KTH)

Michele Pala (Embassy of Italy in Stockholm)

*Short film on ET project (with Swedish subtitles)*

**09:30 to 12:00** **Chair Vaishali Adya (KTH)**

The Einstein Telescope

**09:30–09:45** Antonio Zoccoli (President INFN)

**09:45–10:00** Roberto Ragazzoni (President INAF)

**10:00–10:15** Fabio Florindo (President INGV - **remote**)

**10:15–10:35** Isabella Pagano (INAF Science director)

*The INAF contribution to the Einstein Telescope*

**10:35–10:55** Marco Pallavicini (INFN & University of Genoa)

*From Virgo to ET: the INFN effort on gravitational waves*

**10:55–11:15** Jan Harms (Gran Sasso Science Institute)

*The Einstein Telescope: Next-Generation Research Infrastructure for Europe*

**11:15-12:00** **Round table**

Strengthening collaboration between Swedish universities and infrastructures for future GW project. The expansion of the Einstein Telescope consortium

**12:00 - 12:10** **Closing Remarks followed by light lunch**



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This event is proudly connected to the Italian Research Day 2026 “*Giornata della Ricerca Italiana nel Mondo (GRIM2026)*”, an initiative by the Ministry of Foreign Affairs, and the Italian Ministry of University and Research. It aims at highlighting the contributions of Italian researchers working abroad and at showcasing the commitment of Italy to science, technology, and innovation.

We gratefully acknowledge KTH Royal Institute of Technology, the Wallenberg Centre for Quantum Technology (WACQT), and the Swedish Research Council for their generous funding, institutional support, and logistical assistance.

We are also grateful to INFN and INAF for their valuable contributions, in particular, Francesca Cuicchio, Alberto Masoni and Antonella Varaschin of the INFN for their support in the preparation of the posters, and the media for this event.