

MISSIONE 4
ISTRUZIONE
RICERCA

KILOMETER CUBE NEUTRINO TELESCOPE FOR RECOVERY AND RESILIENCE



Finanziato
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Ministero
dell'Università
e della Ricerca



Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA

Panel di riferimento: *PSE*

Titolo della Proposta: **Kilometer Cube Neutrino Telescope for Recovery and Resilience**

Codice della proposta: **IR0000002**

Tipologia: **(i) - Empowering**

Proponente: *INFN*

Infrastruttura di Ricerca: **KM3-NET - telescopio sottomarino per la rivelazione di neutrini astrofisici di alta energia – KM3**

Importo totale: **67.186.973,06€**

Di cui al Sud: **65.266.511,38€ (97,14%)**

Abstract:

KM3NeT4RR is a project based on the Kilometre Cube Neutrino Telescope (KM3NeT), which is a large European research infrastructure comprising a deep-sea neutrino detector in the Mediterranean Sea, located off the coast of Portopalo di Capo Passero (Sicily, Italy).

The mission of KM3NeT is to implement and operate a world leading open observatory for the study of cosmic neutrino and multidisciplinary research.

Selected as a high-priority research infrastructure for European science and included in the 2016 and 2020 ESFRI roadmaps, KM3NeT will generate breakthroughs in:

- neutrino astronomy: with its superior angular resolution, it will allow to identify the sources of cosmic neutrinos, as well as to measure the energy spectra and flavour composition of the fluxes;

- marine sciences: it will offer large opportunities for sensor connection providing long-term, high-bandwidth, continuous data collection. Moreover, these data can be correlated with the data from the neutrino detector itself, which can also monitor bioluminescent and bioacoustics activities and sea currents.

Besides the high potential for new discoveries, KM3NeT is strongly integrated with the regional and national territory.

From the first stages of its preparation, its potential to generate positive socio-economic and environmental impacts has emerged.

Taking advantage of the gathered experience, the KM3NeT4RR project includes a set of activities to extend the seafloor network and the onshore infrastructures, and for preparation and operation of the components of the underwater detector, providing a significant boost toward final completion of the infrastructure. Education, Training and outreach will complete the picture and enhance the impact of the infrastructure on the territory.

In the next decade, KM3NeT will be the only site in Europe providing a unique opportunity to the scientific community of physicists, astronomers and marine scientists to push further their research frontiers.

Elenco partecipanti alla Proposta:

- Istituto nazionale di astrofisica
- Istituto nazionale di fisica nucleare

- Politecnico di Bari
- Università degli Studi di Catania
- Università degli Studi di Genova
- Università degli studi di Napoli Federico II
- Università degli Studi di Salerno
- Università degli Studi L. Vanvitelli - Caserta
- Università degli Studi La Sapienza - Roma