

outlook 2019

KM3NeT related presentations



The 'eyes' of KM3NeT: The DOM's made of pressure resistant glass spheres measuring each about 43cm in diameter. Die Augen von KM3NeT: Die DOMs aus druckfesten Glaskugeln haben einen Durchmesser von ca. 43cm. Image: KM3NeT

Dive into the Universe of Neutrinos

by Dr. Paschal Coyle

The art installation of Tim Otto Roth is inspired by the efforts of the 'mad' physicists and engineers involved in the IceCube and KM3NeT neutrino telescope projects. Building the largest telescopes in the world located deep in the ice or at the bottom of the sea is a tremendous technical challenge and has taken the efforts of many hundreds of scientists and many tens of years to progress from first crazy ideas to reality.

KM3NeT is the next generation deep sea neutrino telescope; a gigantic cubic kilometre in volume. Located in the Southern Hemisphere, KM3NeT's view of the Universe is complementary to that of IceCube and optimal for the study of astrophysical sources located within our Galaxy. KM3NeT is a distributed infrastructure with one site (ORCA) offshore from Toulon, France at a depth of 2500m and a sister site (ARCA) offshore from Capo Passero, Sicily, at a depth of 3400 m. The instrumentation of the ORCA site is densely packed while that of ARCA is sparsely spaced. This allows the combination of the two sites to be sensitive to neutrinos energies over a wide energy range from GeV to PeV.

The 'eyes' of KM3NeT are thousands of pressure resistant glass spheres filled with ultra-sensitive light sensors; each capable of detecting even just a single photon. The state of the art electronics contained within the sphere can measure the arrival time of the photons with a nanosecond precision. With the knowledge of the photon arrival times and the positions in space at which they are detected, it is possible to reconstruct the directions of the incoming neutrinos to better than a tenth of a degree for the highest energy neutrinos.

To sit at the bottom of the sea in the middle of the KM3NeT telescope has been a long time dream of mine! Imagine, in the darkness of the deepest abyss being able to see the light created by the death throes of neutrinos after their so long journey across the Universe. Imagine to be able hear the sounds of the surrounding immensity-what a privilege! Sitting in the middle of the AIS³ installation Tim Otto Roth has made my dream come true!

I would like to thank for Tim and his team for their imagination, technical skills and perseverance in bringing the AIS³ to fruition. We look forward to welcome the project in the near future also in Provence. Let me thank you in that context to the various sponsors (CNRS-IN2P3, CPPM, Alcatel, Comex, Foselev, Hamamatsu, Ixblue, McCartney, Orange-Marine) that will contribute to the success of this fascinating project.

impressum

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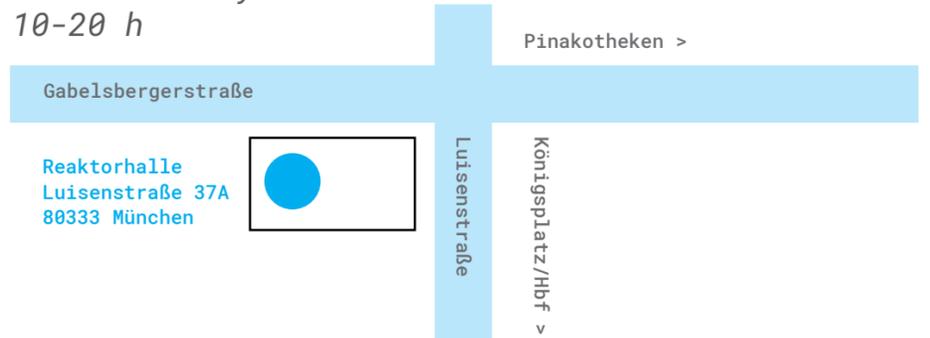
IceCube related presentations

Reaktorhalle München

in collaboration with Technische Universität München & The Collaborative Research Center "Neutrinos and Dark Matter in Astro- and Particle Physics" (SFB 1258), with kind support of the Hochschule für Musik und Theater München

9-10 February 2019

10-20 h



Ludwig Forum für Internationale Kunst Aachen

in collaboration with RWTH Aachen University

6 September - 10 November 2019

opening on 5 September

stay tuned for further presentations on:

www.imagination.net/ais3

twitter.com/aiskjub



Physicist and former spokesperson of IceCube Christian Spiering & artist and composer Tim Otto Roth having worked for years to turn AIS³ into reality. Der Physiker und ehemalige Sprecher von IceCube Christian Spiering & der Künstler und Komponist Tim Otto Roth haben Jahre lang daran gearbeitet AIS³ Wirklichkeit werden zu lassen. Image: imagination projects



SFB 1258

Neutrinos
Dark Matter
Messengers



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