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The KM3NeT ultra-high-energy event

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Even if in a partial detector configuration, a neutrino event of exceptional energy (about 220 PeV) was detected with the KM3NeT-ARCA detector [Nature 638, 376–382 (2025)]. This ultra-high-energy event lies in an unexplored energy range where neutrinos have been predicted but never observed until now.
At the time of the detection, on February 13 2023, the ARCA detector consisted in 21 detection lines, about 10% of the total volume of the full planned detector.
Several hypotheses on the possible origin of this event have been analyzed so far by the KM3NeT collaboration, but a clear indication of its possible origin has not been found.
In this contribution, the details of the event energy and direction reconstruction together with the investigated hypotheses on its origin will be reported.

Collaboration(s)

KM3NeT collaboration

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