## SNvD 2023@LNGS: International Conference on Supernova Neutrino Detection





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## RES-NOVA: archaeological Pb-based observatory for Supernova neutrino detection

RES-NOVA is a new proposed experiment for the hunt of neutrinos from core-collapse supernovae (SN) via coherent elastic neutrino-nucleus scattering (CE $\boxtimes$ NS) using an array of archaeological lead (Pb) based cryogenic detectors. The high CE $\boxtimes$ NS cross-section on Pb and the ultra-high radiopurity of archaeological Pb enable the operation of a high statistics experiment equally sensitive to all neutrino flavors. Thanks to these unique features, RES-NOVA will be as sensitive as the currently running neutrino observatories, while running a detector with a total active volume of only (60 cm)<sup>3</sup>. RES-NOVA will be able to reconstruct the SN neutrino parameters with great accuracy (at the 10% level) and it will be sensitive to SN bursts from the entire Milky Way Galaxy with >5  $\boxtimes$  statistical significance. The expected detector performance and sensitivity will be presented.

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