

WP7 Activity at UNINA for KM₃NeT₄RR

KM3NeT4RR - First annual meeting

23/II/2023

Antonio Marinelli et al.

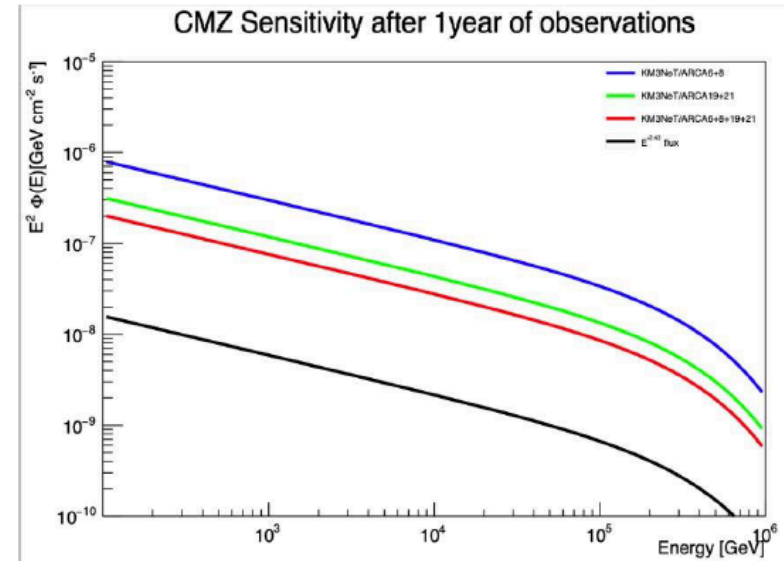
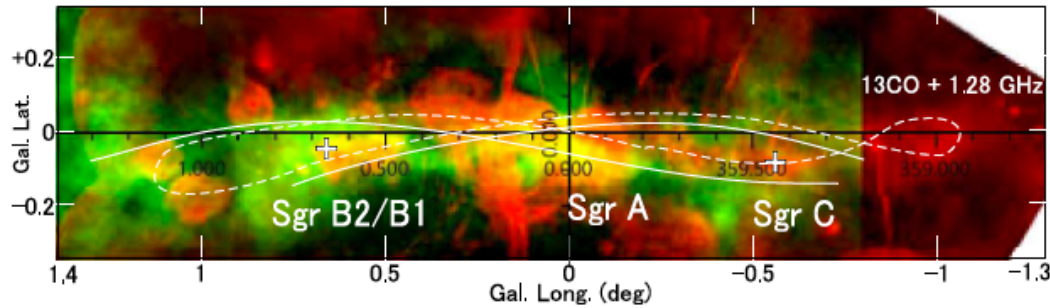
(Dipartimento di Fisica, Università Federico II)



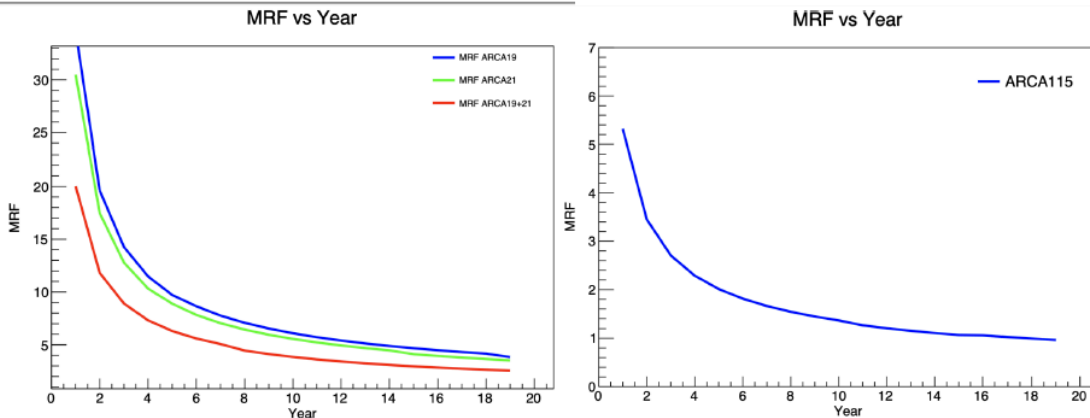
KM3NeT4RR UNINA Units of personnel

- Riccardo Maria Bozza (PhD student) from January 2023 (38th cycle) - Perspectives of KM3NeT for the Central Molecular Zone
- Veronica Oliviero (PhD student) from January 2023 (38th cycle) - KM3NeT follow up of Core Collapse Supernovae
- Antonio Condorelli (RTD A) From December 2023 - several activities on source characterizations and KM3NeT data analysis

Central Molecular Zone studies



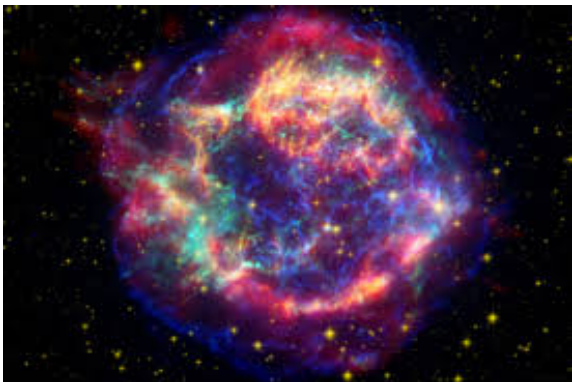
MRF – ARCA19, ARCA21, and ARCA19+21



Testing the astrophysical components of this interesting region with intermediate phases of ARCA

Core collapse Supernovae studies

- KM3NeT follow-up of specific cases to possibly constrain some interesting physical properties.
- In collaboration with Massimo Della Valle INAF OAC



WP7 Galactic emission studies

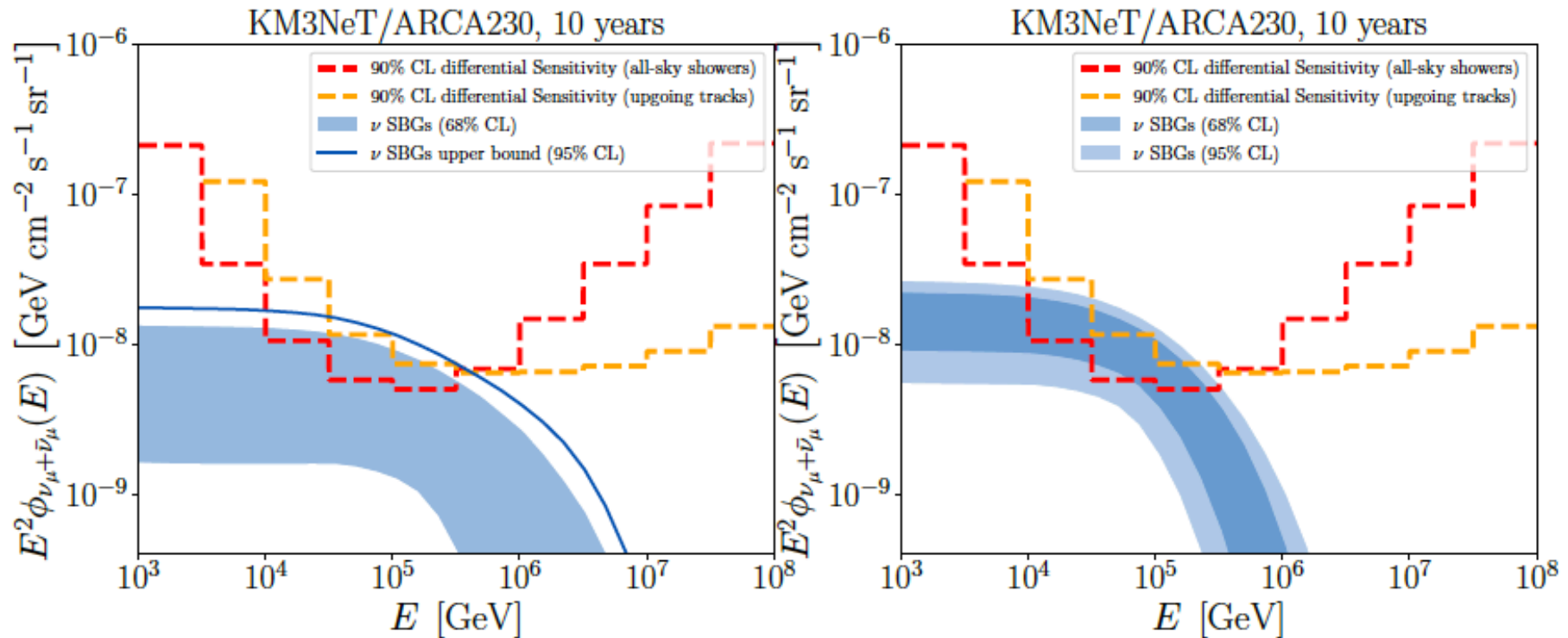
Data (γ) / Data (ν)

- Galactic diffuse + point-like (new masks)
- Galactic only diffuse (to be produced)
- Spatial distribution signal + uniform SED
- Transfer function $\gamma \rightarrow \nu$ needed
- Average energy set by γ experiments
- Adapt to the map resolution and observed regions of the experiments
- References γ : LHAASO and HAWC

Models (ν) / Data (ν)

- Galactic diffuse only
- Galactic diffuse + unresolved sources
- Spatial distribution + energy distribution (Non uniform SED)
- Spatial distribution + uniform SED
- We already have the ν map
- Entire Galactic plane with different resolutions can be used.
- References: KRA-gamma (old and new one), CRINGE, π_0

WP7 Follow up of Starburst galaxies expectation studies



After the expectation studies paper the activity is going on with stacking analyses of ARCA intermediate phases of Starburst + Seyfert catalogs

Additional WP7 activities in the group

**Other WP7 multi-messenger activities in the group
like the:**

- **Off-line follow up of extreme blazars activity periods with the intermediate phases of ARCA**
- **Detailed studies of possible constrains on NGC1068**
- **Other planned but not started yet**