

# Measurement of $\Gamma$ partial widths from carbon-12 excited states using CHIMERA

J. F. Favela Perez<sup>a</sup>

<sup>a</sup>INFN Sezione di Catania

Measuring very small  $\Gamma$  partial widths of carbon-12 from the Hoyle and the 9.6 MeV states above the particle emission threshold are of astrophysical interest because only after such decay carbon-12 is formed after a triple alpha process [1]. In the reaction  $\alpha + {}^{12}\text{C} \rightarrow \alpha + ({}^{12}\text{C}^* + \gamma)$  we used a multi-particle coincidence technique, developed with 4 multi-detector CHIMERA, in order to suppress the gamma background [2]. The CHIMERA data acquisition system for CsI was updated using the GET [3] digital electronics. Details of the suppression method and first results of the analysis will be presented.

## References

- [1] F.Herwig, S.M. Austin and J.C. Lattanzio, Phys. Rev. C **73**(2006)025802.
- [2] G. Cardella *et al.*, EPJ Web Conf (2017).
- [3] E.C. Pollacco *et al.*, NIMA **887**(2018)81.