

## **Modelling uncertainties in GeV - TeV flux predictions of Galactic globular clusters**

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### *What is this contribution about?*

Using a leptonic model that invokes host millisecond pulsars in globular clusters as sources of relativistic particles, we demonstrate that uncertainty in model parameters leads to a large spread in the predicted gamma-ray flux for such clusters.

### *Why is it relevant / interesting?*

This has important implications for the observational strategy of the CTA, indicating that one should be careful to summarily dismiss a model based on linear scaling only, but should also take note of uncertainties in predicted flux linked to uncertain model parameters.

### *What have we done?*

We performed three case studies, predicting (i) the gamma-ray integral flux for a population of clusters (confronting upper limits by H.E.S.S.); (ii) differential flux for M15 (for which MAGIC recently derived stringent differential flux upper limits) and (iii) differential flux for  $\omega$  Cen (from which five pulsars have recently been detected at radio frequencies).

### *What is the result?*

We could non-uniquely constrain several population-averaged cluster parameters, and also demonstrate the need to increase measurement accuracy on key model parameters to improve precision in predictions of cluster fluxes.