Executive Summary contribution

Title: Benchmarking the Science for the Southern Wide-Field Gamma-ray Observatory (SWGO)

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What is this contribution about?

In this contribution we report the science benchmarks that have been derived to guide the instrumental and array design of SWGO.

Why is it relevant / interesting?

The SWGO is an international R&D collaboration for the construction of a wide-field, high-altitude, water Cherenkov gamma-ray observatory in South America, aiming to complement the northern hemisphere's LHAASO observatory (located in China), and the southern site of the CTA observatory (to be built in Chile).

What have we done?

In the first year of the R&D activities, the principal science cases were defined and a series of quantitative benchmarks were derived in association with these science goals, in order to guide observatory design.

What is the result?

The set of science goals is briefly described and the quantitative science benchmarks derived for each of them is presented in detail. Some insights on the future instrument’s performance requirements derived from these science objetives are also presented.