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The SABRE South Experiment at the Stawell Underground Physics Laboratory

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SABRE is an international collaboration that will operate similar particle detectors in the Northern (SABRE North) and Southern Hemispheres (SABRE South). This innovative approach distinguishes possible dark matter signals from seasonal backgrounds, a pioneering strategy only possible with a southern hemisphere experiment. SABRE South is located at the Stawell Underground Physics Laboratory (SUPL), in regional Victoria, Australia.
SUPL is a newly built facility located 1024 m underground (~2900 m water equivalent) within the Stawell Gold Mine and its construction has been completed in 2023.
SABRE South employs ultra-high purity NaI(Tl) crystals immersed in a Linear Alkyl Benzene (LAB) based liquid scintillator veto, enveloped by passive steel and polyethylene shielding alongside a plastic scintillator muon veto. Significant progress has been made in the procurement, testing, and preparation of equipment for installation of SABRE South. The SABRE South muon detector and the data acquisition systems are actively collecting data at SUPL and the SABRE South's commissioning is planned to be completed by the end of 2025. This presentation will provide an update on the overall progress of the SABRE South construction, its anticipated performance, and its potential physics reach.

Author: ZHONG, Yi Yi (The Australian National University, Canberra, Australia; ARC Centre of Excellence for Dark Matter Particle Physics, Australia)

Co-author: Dr BOLOGNINO, Irene (The University of Adelaide)

Presenter: ZHONG, Yi Yi (The Australian National University, Canberra, Australia; ARC Centre of Excellence for Dark Matter Particle Physics, Australia)

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