Contribution ID: **19** Type: **not specified**

Drone-Based Calibration Technique for The Array of Long Baseline Antennas for Taking Radio Observations from the Sub-Antarctic (ALBATROS)

Monday 24 October 2022 15:25 (15 minutes)

The ALBATROS experiment is composed of an array of radio telescopes operating in the 1.2 –125Mhz range with the aim of laying the groundwork for probing the cosmic dark ages (<30Mhz) through measurement of the 21cm redshifted emission of neutral hydrogen. To better understand the behaviour of the antennas used in this array, we propose to fly a transmission source mounted to a custom-built multi-rotor unmanned aerial vehicle (UAV) in the far field region of the antenna. By studying the power received by the ground antenna from the transmission source as well as the telemetry data from the UAV, we can generate beam maps for the ground antenna at various frequencies. From this data we can properly calibrate our instrumentation to maximize efficiency, as well as gain a better understanding of our data at different frequencies.

Author: Mr BARBARIE, Christopher (McGill University, Montr´eal, Canada)

Presenter: Mr BARBARIE, Christopher (McGill University, Montr´eal, Canada)

Session Classification: Extragalactic astrophysics and cosmology