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## **QUBIC: the Q&U Bolometric Interferometer for Cosmology. A novel way to look at the polarized Cosmic Microwave Background.**

*Friday, July 7, 2017 11:45 AM (15 minutes)*

In this presentation I will talk about QUBIC, an experiment that takes up the challenge posed by the detection of primordial gravitational waves with a novel approach. Detecting the signature left by primordial gravity waves in the Cosmic Microwave Background (CMB) entails measuring a tiny polarized component of the CMB, the so-called B-modes, that is literally buried in polarized astrophysical foregrounds and can be disguised by instrumental systematic effects. Deploying instruments with tens of thousands of detectors is not enough to measure this elusive, sub- $\mu\text{K}$  signal; one has to effectively control the foreground and instrumental contributions. QUBIC responds to these needs by combining the sensitivity of state-of-the-art bolometric detectors with the systematic effects control typical of interferometers, allowing us to clean the measured data from instrumental effects by exploiting the so-called “self-calibration”, a technique deeply rooted in the interferometric nature of the instrument. In my talk I will first highlight the challenges posed by CMB B-modes measurements and then focus on the development of the first module of QUBIC, a dual band instrument (150 GHz and 220 GHz) that will be deployed in Argentina during the Fall of 2018.

### **Experimental Collaboration**

QUBIC

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