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Type: **Invited Talk**

## **The ALMA Observatory –amazing science discoveries and the Roadmap for the next decade**

*Monday 21 February 2022 11:30 (40 minutes)*

The Atacama Large Millimeter Array (ALMA) at 5000m altitude in northern Chile is an outstanding achievement. The array consists of 66 high-precision antennas, each with a complement of up to 10 state-of-the-art receiver systems that enable observations between 35 GHz up to almost 1 THz. The total collecting area and sensitive receiver systems in this world-leading facility, combined with the long baselines and the high-altitude site, confer unprecedented performance characteristics for scientific exploration of the Universe at sub-millimeter wavelengths. This talk will highlight a number of the ground-breaking science discoveries – the first detailed images of proto-planetary systems, detection of molecules in the first galaxies, and the first direct image of a black hole shadow - and will describe the current operational status of ALMA. Looking to the future, the ALMA2030 Development Roadmap will be presented, the scientific drivers, and the technology development that will confer new observational capabilities that will keep ALMA at the forefront of astronomical research.

### **Primary experiment**

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**Session Classification:** Astroparticle Detectors

**Track Classification:** Astroparticle Detectors