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Title: Inflatable antenna for CubeSat: X-Band design

#### Abstract

Currently<sup>1</sup> planned interplanetary CubeSat mission concepts have shown that one of the most challenging aspects of the design is communication. Due to the increased path distance with respect to low Earth orbit missions, interplanetary CubeSats need to be equipped with more powerful antennas to relay data from far locations in the solar system. Many research efforts are currently aiming to fill this need, as it can be seen from recent developments in reflectarray antennas and deployable antennas. The inflatable antenna is of particular interest for its stowing efficiency (20:1) and its inflation mechanism with sublimating powder. This presentation will cover the current effort of designing an inflatable antenna at X-Band. Recent results from the current design, photogrammetry tests and anechoic chamber tests will be presented. Inflation system and rigidization challenges will also be discussed.

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