



Wideband Spline-Profiled Feedhorns for Advanced ACTPol

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Advanced ACTPol (AdvACT) is an upgraded camera for the Atacama Cosmology Telescope that aims to measure the Cosmic Microwave Background anisotropies over a wide range of angular scales. AdvACT will employ three arrays of polarization-sensitive multichroic detectors to observe in five frequency bands from 30 GHz to 230 GHz. The AdvACT arrays are designed to minimize the spacing between pixels on the array to achieve higher sensitivity. We will present the spline-profiled feedhorns that we optimized for the AdvACT arrays. Our design process minimizes dead-space in the array by forgoing the typical corrugated design. Each feed is optimized to maximize the spill-efficiency while carefully controlling polarization systematics. I will discuss the design, fabrication, and early testing of wideband spline-profiled feedhorns for the three multichroic arrays on AdvACT.