

Electronically-Reconfigurable Surfaces for Improved Coexistence Between Radio Astronomy and Satellite Communications Systems

- Problem: Protecting radio astronomy from emerging satellite constellations
- Our solution: Spatial nulling using reflectarray-like edge treatments for large reflector antenna systems
- Our findings: Configurable deep nulls possible using just 10%-20% of dish surface
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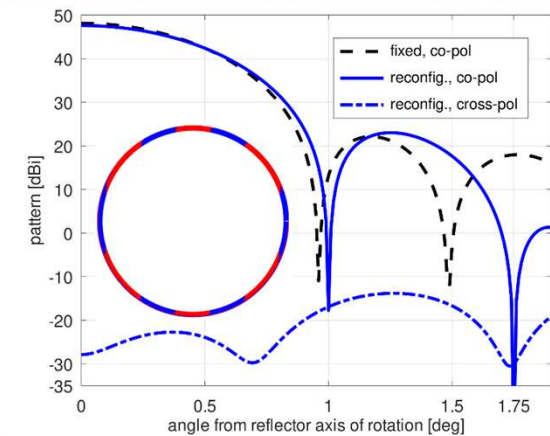
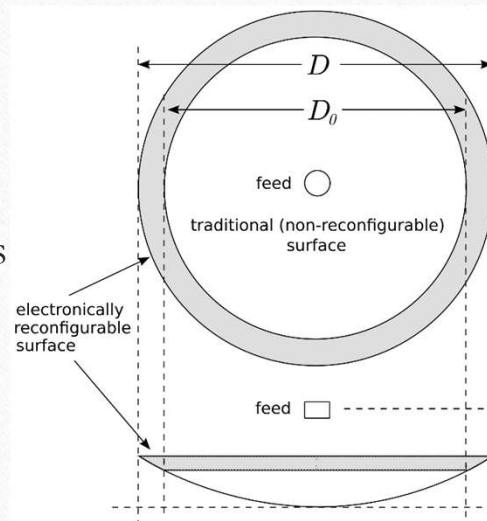


Fig. 5. Total patterns for the $D = D_0 = 18$ m (non-reconfigurable) system and the $D = 18$ m, $D_0 = 17$ m reconfigurable system with 1-bit phase quantization. The inset is an on-axis view of the system with the surface of the reconfigurable rim color-coded to indicate unit cell state.

For more information, please see NSF Grant AST-2128506, arXiv:2102.08274 (IEEE AWPL), arXiv:2202.13219