

## **Conformal Radome Design Based on a Metasurface Structure with Printed Elements**

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Airborne radar antennas are usually enclosed in dielectric radomes for protection from a variety of environmental and aerodynamic effects. However, the presence of the radome will affect the radiation performance of the enclosed antenna significantly, due to interactions between the antenna and the radome. Radomes can be constructed in several shapes (spherical, geodesic, planar, etc.), depending on the application. In case of high-speed moving platforms like aircrafts, another important consideration is related to the streamline shape of the radome to reduce its drag force.

This presentation describes the application of the meta-surface technology to the design of a conical airborne radome. The airborne radome skin is based on a mixture of dielectric layers and meta-surface layer, which is modeled by an equivalent transmission line circuit. The proposed design exhibits satisfactory improvement in terms of radiation pattern gain and the bore sight error.