

# Study of single-Beam radiation for spiral antenna

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## ABSTRACT

Abstract-This thesis presents the concept of embedding a frequency-selective surface in a backing cavity to reduce the back-lobe level and depolarization deficiency of a broadband spiral antenna. For demonstration, a single-arm rectangular spiral antenna backed by an FSS-added cavity was created and studied. The cavity-backed antenna has an enhanced main beam and an extremely-low back-lobe, in contrast with the original spiral antenna without cavity. In addition, the antenna backed by the FSS-added cavity shows better performance, especially in the depolarization reduction and main-beam enhancement, compared with the spiral antenna backed only by the cavity having no FSS.

Keywords : Spiral antenna、frequency-selective surface

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