



Artificial magnetic conductor structure for dielectric resonator antenna

Master Thesis
or
Research Thesis

Theory and Motivation:

- due to perturbation from feeding elements and presence of groundplane, side-lobes appear in dielectric resonator antenna (DRA), thereby decreasing its directive gain
- artificial magnetic conductors and metamaterial based reflectors implemented in the groundplane can increase antenna gain

Application:

- reduction of side-lobes and back-lobe
- elimination of grating lobe from an antenna array

Tasks:

- design of test antenna, e.g. cylindrical or spherical DRA
- unit cell simulations for magnetic conductor surface
- integration of antenna with metamaterial elements
- measurements in anechoic chamber

Information:

- requires some knowledge of high-frequency circuit design and concepts
- thesis can be written in either German or English language
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