Universität Stuttgart Institut für Hochfrequenztechnik

Biomimetic Antenna Array for Localization

Master Thesis

Theory and Motivation:

RF-localization is well-known. However, biomimetic antenna arrays promise more accurate angle estimation of an incident wave. The phase offset between the signals received by two antennas is treated in the Biomimetic Coupler. This device "mimicks" the hearing system of insects. A better angle detection can be achieved. In this work, a biomimetic coupler shall be designed and measured.

Application:

- Radar and Object Localization

Tasks:

- Review the principles of operation
- Design (by EM-simulation) of biomimetic coupler and antennas
- Verify ability to estimate the position of a nearby transmitter

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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