



Contents of the Course

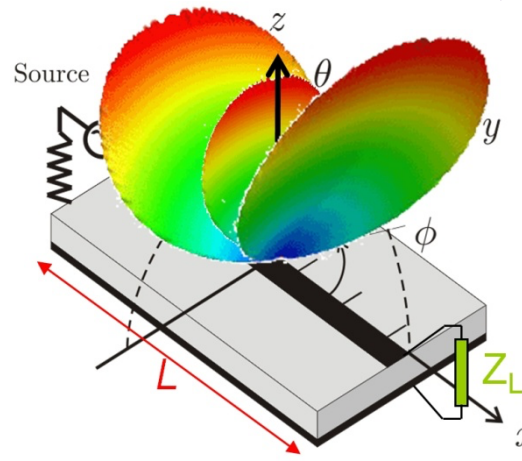
General features and applications. Fields of a leaky-wave source, leaky waves in open structures. Characterization of leaky-wave antennas: determination of the phase and attenuation constants, relation to the radiation properties. Mechanisms employed to produce leakage: apertures, asymmetries, use of suitable modes. Transverse equivalent networks, aperture admittance, transverse-resonance technique.

Periodic Structures. Scanning behavior, phased arrays of leaky-wave line sources, unit-cell approach. Computation of periodic Green's functions. Higher symmetries. Periodically loaded structures.

Radiation-pattern shaping, aperture distribution: tapering procedures for leaky-wave antennas. Examples of practical antennas: partially open metallic waveguides, dielectric structures, printed lines. Feed, losses, manufacture issues. Measurement techniques.

Metamaterial and Terahertz leaky-wave antennas. Antennas exploiting band-gap properties.

Inhomogeneous plane waves in dissipative media: deep penetration, total transmission.



The Course aims at giving a complete knowledge of the basic physical mechanisms involved, of the various suitable design techniques, and of the possible antenna applications of Leaky Waves and Periodic Structures.



Rome, Faculty of Engineering, Venue of the Course



Leaky Waves and Periodic Structures for Antenna Applications

European School of Antennas and Propagation



April 22-24, 2024

Sapienza University of Rome
Faculty of Civil and Industrial Engineering

Via Eudossiana 18, Roma, Italy

Course Coordinator: Fabrizio Frezza



Contributions:

