

The paper is dealing with the principles for modeling and simulating by 3D simulators of the well-known Lüneburg lenses used as communication antenna devices. The models of spherical, semi-spherical and cylindrical multi-layer dielectric lenses are discussed. The results show the effectiveness of the proposed simulation procedures for investigation of the focusing effects and antenna parameters of these large-scale beam-forming devices.

**Keywords :** antennas, dielectric antennas, electromagnetic 3D simulators, focusing, lens antennas.

**PACS number :** 77 22-d