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Manufacturing of large aperture parabolic mirrors using additive technologies for focusing microwave radiation

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Three-dimensional printing is currently widely used for producing various microwave components, including radiation focusing. Therefore, additive technologies with subsequent metallization were chosen for the manufacture of large aperture parabolic mirrors. These mirrors can be used firstly in a scheme to detect the angular and orientation dependencies of transition radiation and other types of polarization radiation. Secondly, they can be used as part of an interferometer for spectral radiation measurements. This report describes the creation of 3D models and their printing on a 3D printer. It also provides data on applying a metal layer using magnetron sputtering, as well as data of modeling radiation focusing using geometric optics in the COMSOL Multiphysics package.

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