Abstracts

Circular Bends in Dielectric Frame Beam Waveguides (Short Papers)

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An investigation is described on circular bends in beam waveguides constituted by dielectric frames. A uniform bending of the guide axis is obtained by tilting each frame by a small angle; however, due to the phase correction performed by the dielectric frame, the losses introduced by the bending can be made lower than those of an analogously bent iris waveguide. A numerical analysis is performed on the basis of the analogy between beam waveguides and open resonators which permits the assessment, in a number of cases, of the maximum permissible amount of tilting and the corresponding optimum frame dimensions in view of acceptable losses. The losses due to mode conversion are also evaluated when considering the connection between a straight and a curved section of the waveguide.

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