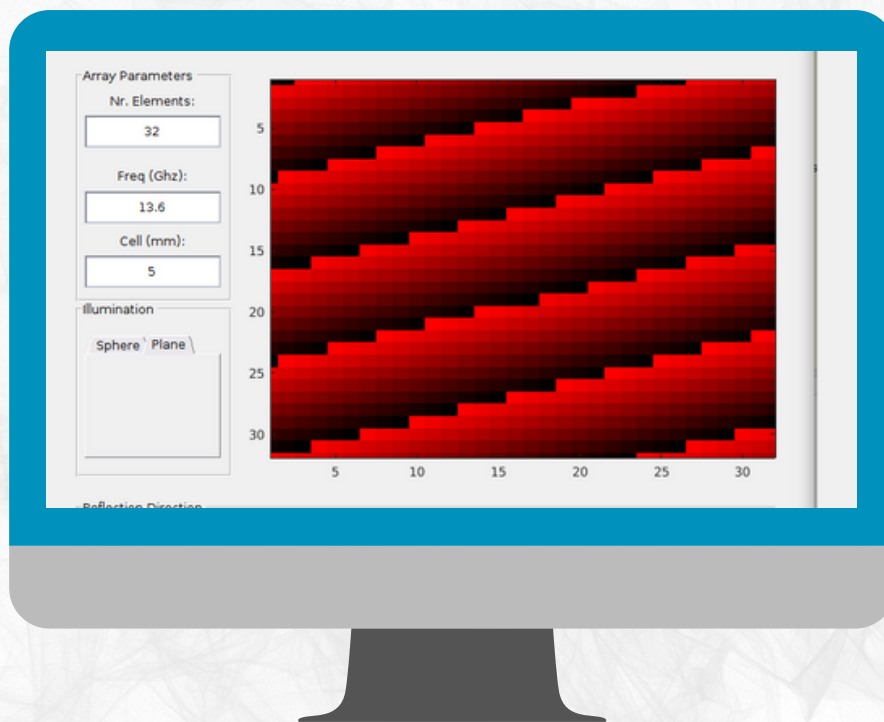# Beamforming using Reconfigurable Intelligent Surfaces

Optical and Electronic Technologies - OET

MATLAB code to illustrate and explore the design space of beamforming using reconfigurable intelligent surfaces (RIS). A RIS is a planar array of patch antennas, assumed to be homogeneous, which can affect the phase delay of a reflected signal via control of their electrical properties. By applying appropriate control to the entire array, it is possible to generate constructive interference and direct the radiation pattern to a specific azimuth and elevation angle. The efficiency depends on the applied control and the electrical characteristics of the unit element of the array.

This simulator allows visualization of the resulting beam direction for a given configuration, with a calculation time of a few seconds.

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