Figure 1: Light field parameterisation. Each light ray is defined by its intersection with a camera plane \((V_x, V_y)\) and a focal plane \((x, y)\) [16].

Figure 2: Captured light field [17]. Dataset can be analysed as a 2D array of images formed by the light rays which pass through a specific point on the camera plane. In Fig. 2 we illustrate an example of a light field with 16 camera locations. The camera positions are evenly spaced on a 2D grid \((V_x, V_y)\).

The light field can be further simplified by setting the 2D camera plane to a line. This is also known as the EPI volume [18]:

\[
I = P_3 (V_x, V_y, x, y) .
\]  

In comparison to the light field, the EPI is easier to visualise and in the following sections we use it to present a number of concepts. All of the properties are however easily generalised to the light field. Next, we review the EPI and light field structure and present the layer-based representation.