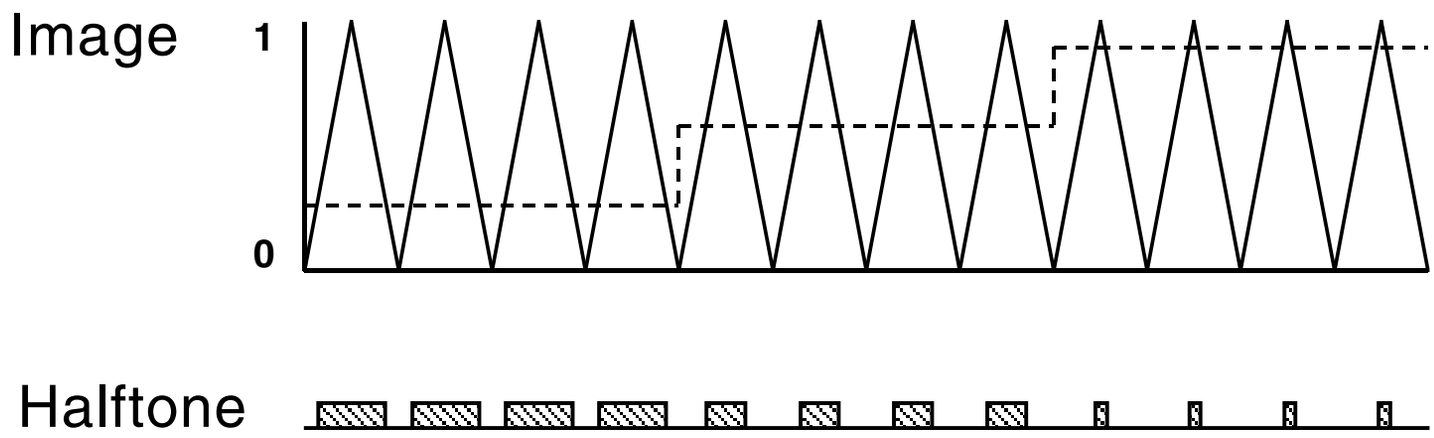

Figure 6.3 Threshold array halftone algorithm.

screen is shown in one dimension as a sawtooth pattern. The halftone cell is represented by a single tooth in that pattern. The cell is repeated across the image to create the complete halftone screen.

A one-dimensional image is shown superimposed on the halftone pattern. In this example, the image is shown as three different constant levels. As the cell is replicated across the image, each element in the cell is compared in value to the image pixel at that location. If the image pixel is larger than the threshold value at that location, then a white pixel is stored in the output array; otherwise, a black pixel is stored. This simple comparison will generate an array of black and white dots across the image. The size of the dots will vary, depending on the brightness of the image in that region. The darker that region of the image is, the larger the black dots will be. The spacing between the dots, or the frequency of the halftone screen, remains the same, independent of the gray level of the input image. This makes the clustered dot halftone screen an AM halftone algorithm.

Other halftone dot structures can be implemented with a threshold array