Antenna arrays are an important key for modern radar and communication systems. The digital beamforming allows an estimation of the direction of arrival or a steering of the beam. However, there is a tradeoff between these properties and the number of antennas causing costs. In general, a larger array gives improved resolution or a smaller beam. On the other hand, the distance between the antenna elements cannot be too large due to ambiguities and sidelobes. Therefore, the aim is to have the best results with as less antennas as possible. If the distances between the elements of such an array are (much) larger than half of the wavelength, it is called a sparse array.

In this seminar work, a literature study shall be done searching how such a system can be designed and evaluated. There are different approaches that can be compared. They shall be described in a written paper and an oral presentation.