**Physical optics analysis for the partially constructed FYST model**

The FYST telescope, currently pre-assembled in Xanten, will be partially constructed from the centra and one-half panels of its two mirrors, as depicted in Figure 1. To check the possibility of using the half antenna to test the FYST holographic system, I simulated the beam patterns of the incomplete antenna and studied the influence of the carbon fiber structure on the antenna’s beam patterns.

A blue squares in a box

Description automatically generated with medium confidence

M2

M1

Figure 1. Partially constructed FYST model. The model consists of centre and Right-side panels on M1 and M2.

**Beam pattern of the half antenna**

The telescope is horizontal reflection symmetric, therefore, a half antenna only can deliver a half power of the original telescope to the receiver, the gain is also reduced by around 3dB.

A graph of different types of graphs

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