

**“22 GHz channel and VLBI system focalization solution for the new 40 m radiotelescope of the national observatory of Spain”, pp.196-205**

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**Abstract** – This paper presents an optical solution for the 22 GHz channel and the Very Large Base Interferometry layout (VLBI) of the new 40 m radiotelescope of the Centro Astronómico de Yebes (CAY). Traditionally a VLBI system is placed at the secondary mirror of the radiotelescope. Our solution improves the traditional design by placing it inside the receiver cabin. A position-tolerance study of the focusing elements and their implementation is also presented. The results obtained are of fundamental importance for the mechanical construction of the receiver cabin. Radiation patterns, efficiencies and schematics of the radiotelescope are shown.