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Optimization of edge shape for stray light reduction

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Reducing the stray light level is one of the issues that astronomical instruments have to face. In particular, the design of baffles requires special attention in order to minimize the light scattered and diffracted by the edge of the baffle's vanes. This is particularly critical for instruments in which the main source of stray light is in the field-of-view (such as solar and stellar coronagraphs).

We designed a dedicated set-up that allows comparing different edge geometries and finishing in a fast and comprehensive approach. A reference edge configuration was chosen and all the other configurations were compared with it.

In this paper, we describe the set-up, all the characterized configurations and the obtained results.