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# RISTRETTO: reaching $1\text{E-}4$ fiber contrast at $2\lambda\text{D}/D$ in the visible

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## Abstract

RISTRETTO is a visible, single-mode fiber-fed, High Dispersion Coronagraphic instrument for the VLT. Its main target, Proxima b, defines most of the requirements on the Front-End, which are: 1) Planet coupling into SMF at  $2\lambda\text{D}/D > 50\%$ ; 2) Average coupling of the star on the planet fiber  $< 1\text{E-}4$ . We first present our baseline design, which primarily consists in a single-stage  $40\times 40$ , 2kHz XAO and a modified version of the Phase Induced Amplitude Apodizer as part of a 7-spaxels coronagraphic IFU. We will also present first prototyping activities to demonstrate feasibility of the coronagraphic IFU, as well as a first optical design of the Front-End.

**Keywords:** XAO, IFU, High Dispersion Coronagraphy

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