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Experimental considerations on emittance growth in the Drive Beam recombination at CTF3.

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One of the main objective of the CLIC Test Facility (CTF3) at CERN is to demonstrate the two-beam acceleration scheme of CLIC.
A key point to ensure stable power production is to obtain a stable and loss-less Drive Beam recombination without spoiling the initial beam quality.
The projected emittance of the recombined beam is a clear measurement of the quality of the full process: orbit and dispersion mismatch of the single sub-sections result in a projected emittance growth that makes difficult to transport the beam afterwards.
Another source of emittance growth has been identified in the strong isochronous optics, together with the high energy spread of the beam.
A collection of measurement and feedback tools have been implemented and tested to mitigate orbit and dispersion mismatches.
The latest results on emittance growth due to the chromatic aberrations and non-linear dispersion will also be presented.

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