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Design Considerations for a New Extraction Arc at the European X-Ray Free Electron Laser

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It has been proposed that a new arc, called T20, should be installed for a third fan of undulators at the EuXFEL in the next decade. Due to geometric constraints this arc will need to be at a much larger angle than for the existing arc (T1). It is expected therefore that coherent synchrotron radiation effects in T20 on the bunch emittances will be considerable. To preserve the x-ray beam qualities in any downstream undulators, this effect will need to be understood and ideally mitigated. In this paper the status of the T20 beamline design is discussed, the expected downstream beam properties are shown and possible strategies for improving the beam quality are outlined.

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Yes

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