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New pulse forming line and transmission cables for the CERN PS booster extraction and transfer kickers

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The CERN PS booster features four extraction kicker systems, one for each of the four superposed rings and three transfer kicker systems for recombination of the beams when being transferred towards the PS. Each of these systems consist of SF₆ gas filled Pulse Forming Lines (PFL) which are resonantly charged and then fast discharged by thyatron switches into SF₆ gas filled transmission cables, transferring the pulse to the magnets. This paper outlines the future refurbishment of PFL and transmission cables with the constraint of minimizing SF₆ gas usage. The pulse requirements are presented since they limit the choice of technology together with the development cost for alternative SF₆ free technologies. The optimization potential regarding technical pulse requirements versus beam performance is discussed. The paper concludes with the choice made and the technical design outline for the refurbishment of the PSB transfer and extraction kickers.

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Footnotes

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Yes

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