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**A proposal to test beam extraction by crystal channeling  
at the SPS : a first step towards a LHC extracted beam**

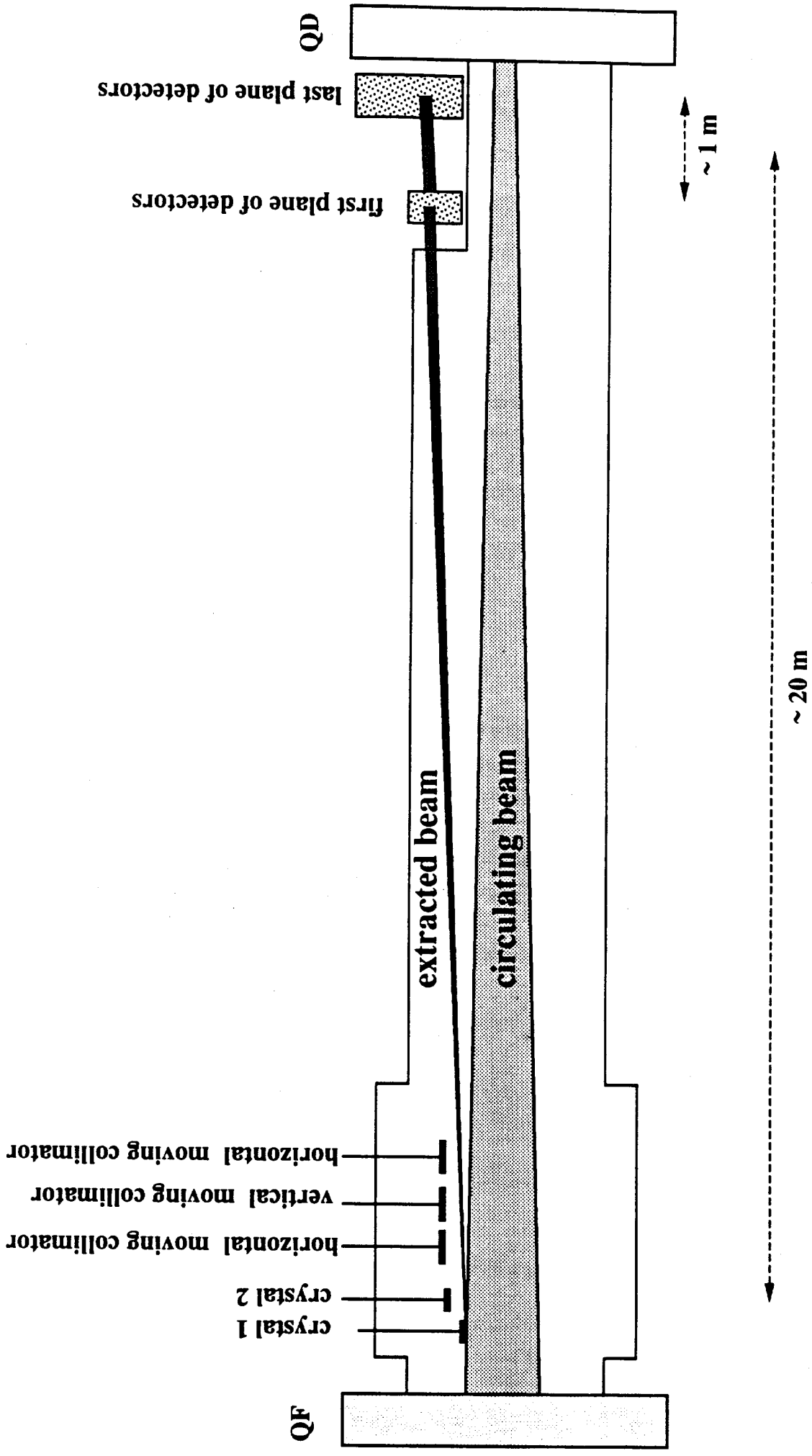
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The availability of a beam extracted out of the LHC accelerator would open up very interesting possibilities for B-physics, in particular for the study of CP-violation. Channeling in bent crystals appears to be the most promising method to produce an extracted beam of intensity  $\sim 10^8$  p/sec. This would provide as many as  $10^{10}$   $B\bar{B}$  pairs per year of run, two orders of magnitude more than could be produced by an  $e^+e^-$  B-factory with  $\mathcal{L} = 10^{34}$   $\text{cm}^{-2}\text{s}^{-1}$ . We propose a R&D program to study beam extraction at the CERN SPS, using a bent crystal to be installed in the SPS beam pipe and placed next to the beam in such a way as to intercept the beam halo. Transverse excitation of the beam in presence of non-linearities will be used to create halo conditions similar to what are expected for LHC.

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Schematic layout of the SPS experiment for an extraction by a bent crystal