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Study of a novel eight electrodes RF pickup

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The IFMIF-DONES facility located at Escúzar in Spain will consist of an accelerator delivering 125 mA of 40 MeV deuterons onto a Lithium target. At the last part of the accelerator, when the beam footprint is almost shaped, different beam diagnostics are considered. In order to protect the machine against changes of the beam and give a safe interlock, a novel RF pickup made of eight electrodes is designed. This RF pickup is designed with the objective to sense displacements of the beam centroid as changes of the beam profile. In this paper a preliminary study is presented based on an analytical and CST simulation approach. Both approaches, considering pencil and real beams from TraceWin simulations, are compared. Next, a sensitivity study of how different parameters affect the response is performed in CST simulations. This work has been carried out within the framework of the EUROfusion Consortium.

Footnotes

Funding Agency

I have read and accept the Conference Policies

Yes

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