ID: 2028 - TUPSO42 Shiming Strategy for the Phase Shifters Used in the European XFEL

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Abstract The undulator systems of the European XFEL need a total of 91 Phase Shifters. The 1st field integral of these devices must not exceed 0.004Tmm for working gaps > 16mm. For smaller gaps it is slightly released. In spite of the highly magnetically symmetric design and considerable effort such as the selection and sorting of the magnets small 1st field integral errors cannot be excluded. In this paper a strategy is studied to correct small gap dependent kicking errors as expected for the phase shifters of the XFEL.EU.by using shims of different geometries and sizes. It is found, that small gap dependent kicking errors can well be corrected for using this method. This is a systematic effort to provide effective fast tuning methods, which can be applied for the mass production. The meaning of shim signature will be explained in this paper. The method is demonstrated by simulations and measurements.

Type of Presentation Poster

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