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Wed-Af-Or3-03: Horizontal winding method for undulator using high-temperature superconductor tapes

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To achieve a short-period, high-field undulator using HTS tape, we propose novel winding methods specifically designed for this purpose. Given the minimum bending radius constraint of HTS tape, conventional horizontal winding has been considered unsuitable for short-period undulators, leading to a primary focus on vertical winding. However, to overcome this limitation, we introduce an innovative winding technique that allows for the successful realization of a short-period undulator using horizontal winding. In the conference, we will show the winding method, winding procedure, and the simulation results of the achievable undulator field.

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