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High performance switch design for HTS transformer rectifier type flux pump

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The flux pump technology is able to output ultra high current for the High temperature superconducting (HTS) magnets without the copper current leads. This can make the HTS magnets system more compact and save more energy. Currently, the flux pump technology is moving forwards to high current level up to 1-2 kA. But there are still many components to be optimized and studied, and the HTS switch is one of them. This study will present an experimental study on the AC field controlled HTS switch made by ReBCO coated conductor, based on our experience from previous research work of multi-physics simulation. The experimental results will be compared with simulations, and will find out an optimized switch design based on experiments and with the help of simulations.

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