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## Improve the Central Magnetic Field of an HTS Magnet with Multi Linear-Motor Flux Pumps Based on Genetic Algorithm

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In this article, we proposed a method of using multiple linear flux pumps to charge an HTS magnet and set up an experimental system. The system mainly includes three linear-motor flux pumps and five HTS double pancake coils, of which the five coils form an HTS magnet. Each linear-motor flux pump adopts an independent inverter and a DC power supply for cluster control. In order to obtain the maximum central magnetic field of the HTS magnet, we explored a method of optimizing the excitation sequences, that is, collecting certain sorted data and using the genetic algorithm of machine learning to preliminarily explore the effect of different excitation sequences on improving the central magnetic field of the HTS magnet. The results showed that this method can effectively improve the central magnetic field of the HTS magnet compared with single power supply excitation.

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