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Wed-Mo-Po3.07-06 [48]: Magnetization of HTSC tape in flux pump regime

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We have studied both theoretically and experimentally the process of magnetization of HTSC square (12mm x12mm) tape as well as stack from tapes by means of small source of magnetic field. The size of magnetic field localization was less than the size of sample. Local magnetic field induced the currents which were calculated in the frame of critical state model taking into account the dependencies of critical current on magnetic induction. The magnetization of the sample was calculated as well. We investigated the various methods of applying of magnetic field in which the amplitude of magnetic field was changed adiabatically. The position of source of local magnetic field changed too. It was shown that multiple cyclic impact of external field leads to increase in total magnetic moment in the sample up to 80 per cent from the maximum theoretical limits for studied sample. The results obtained make it possible to optimize the magnetization regime of a square fragment of a tape (or a stack of tapes) when implementing a magnetic pump on their basis.

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