Critical Currents of Bismuth Tape

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The critical currents of commercial bismuth based superconducting tape were determined in the two ways. In the first one the transport critical current density was measured by the four points method using the d.c. current power supply at the liquid nitrogen temperature. In the second one the critical current densities were obtained from the absorption part of a.c. susceptibility measurements using the Bean's model near the critical temperature. The temperature dependence of the critical current densities was fitted to take advantage the Ginzburg – Landau strong-coupling limit approach. Using the fit parameters the critical current density at 77 K was calculated. The critical temperature of this tape (Tc= 110 K) was determined from the a.c. susceptibility measurements.