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**Effect of current on the dc I-V characteristic of polycrystalline  $\text{YBa}_2\text{Cu}_3\text{O}_{7-X}$  near  $T_c$**  SNEHADRI OTA, Institute of Physics, Bhubaneswar, Orissa — The dc I-V characteristic of polycrystalline  $\text{YBa}_2\text{Cu}_3\text{O}_{7-X}$  high temperature superconductors (HTSC) is measured near the transition temperature ( $T_c$ ). The  $T_c$  was found to be 90 K with a width of 2 K. The voltage was measured at various current values and with reversing the current. A difference in voltage was found, for forward and reverse current direction near  $T_c$ . This can be understood qualitatively as due to the d-wave superconductivity as predicted by the RVB theory. This can also be understood qualitatively as due to the presence of proximity junctions, which is generally indicated by finite transition width in HTSC or A15 superconductors. The observed directionality of the I-V characteristic can be understood in terms of trapped flux by the self-field of the current and the proximity junctions in these materials.

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