116. Title: Temperature distribution in a large Bi2Sr2CaCu2O8+delta mesa

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Abstract: Joule heating in large Bi2Sr2CaCu2O8+delta mesas was numerically analyzed while taking into account typical thermal conductivities and their temperature dependences of all the materials involved in heat dissipation and removal. Such mesas are used in experiments on THz-range radiation. The analysis shows that the temperature increases with bias current and is distributed unevenly along the mesas. The temperature of the mesa's middle part can even exceed T-c at sufficiently high bias. The overall current-voltage characteristics are also calculated self-consistently, showing a negative differential conductance in a wide range of currents.