Session V: (Focused Session)

Microwave and Millimeter-Wave Superconductivity Technology

Chairman: Erwin Belohoubek
David Sarnoff Research Center
Princeton, NJ

The first paper, describing a fully integrated millimeter-wave SIS-mixer, represents the outgrowth of a mature low-Tc superconducting technology. The recent rapid progress in high-Tc materials raises expectations for the early feasibility demonstration of passive microwave components that take advantage of the low loss properties of the new materials. The remaining papers in this session concentrate on the microwave characterization of the new high-Tc superconductors with emphasis on techniques that measure surface resistance and power handling capability under conditions close to those encountered in final applications. The encouraging fact is the emergence of materials that have surface resistance values one- to two-orders of magnitude better than copper in the 1 to 10 GHz range at the temperature of liquid nitrogen. These values look very promising for many passive component applications.

1:30 p.m.–3:00 p.m., Wednesday, May 9, 1990
West Ballroom D