

## DEVELOPMENT OF MILLIMETER LOW-NOISE RECEIVERS AT NAGOYA UNIVERSITY

H. Ogawa, A. Mizuno, Y. Fukui  
 Nagoya University, Japan  
 K. Okuyama  
 Yamagata University, Japan

We report the present status in the development of the millimeter-wave low noise receiver at Nagoya University.

In 1983 we built 15 K cooled Schottky mixer receivers for 80 - 120 GHz. Typical receiver noise temperatures were about 200 - 250 K in DSB. One of the receivers was installed on the 4-m telescope and has been used in the observations since March 1984. In 1984 we started to develop SIS junctions (Pb/Bi/In alloy) for superconducting mixer receivers. The DC I-V characteristics measured at 4.2 K are shown in Figure 1. The transition at 3.5 mV in the I-V curve is sufficiently steep for sensitive detection of 100 GHz photons. Currently, construction of the SIS receiver is in progress.

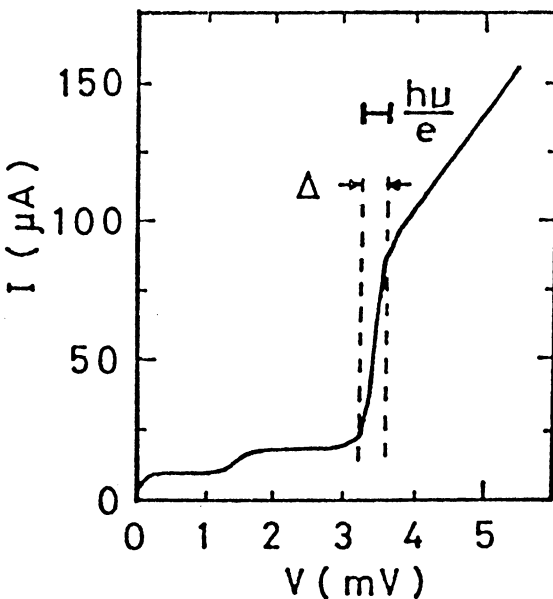


Fig. 1. DC I-V characteristics of a Nagoya-Yamagata SIS junction measured at 4.2 K (July 1985).