

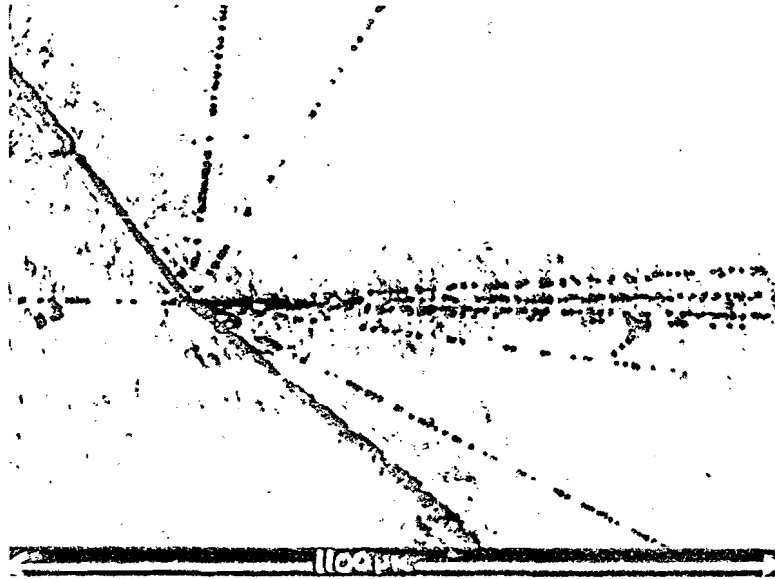
### III.D BERN INFINITESIMAL BUBBLE CHAMBER

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BIBC is a cylinder 6 cm in diameter and 3.5 cm deep, filled with  $C_3F_8$  or  $CBrF_3$ . This would provide about 10% of an interaction length. The cycle rate is 5 Hz. BIBC was tested at CERN and obtained 300 bubbles/cm, hence bubble size about 20  $\mu m$ . They expect to be able to detect 300  $\mu m$  charmed decays.

The exciting new development is that the bubbles have been successfully photographed early in their development (at 8  $\mu m$  diameter with a laser. The resulting hologram was projected and viewed with a video camera; this image was then photographed at two different magnifications and is shown in Fig. 1. The image has been reversed between the two photographs. One could hope to do pattern recognition on the video signal and control the three-dimensional measurements electronically, with little aid from a scanning technician.

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Holography Test In BIBC  
8 Micron Bubbles Resolved Over 7 cm  
(Photograph courtesy of  
M. Dykes et al. , CERN)

