Antarctic expeditions pursue the aim to win a better knowledge of the natural conditions of the distant ice-covered continent. Of course geological, glaciological and meteorological research tasks are predominant for economic and surviving interests. Medical researches on this continent aim at finding out how extremely different day and night influences, social isolation and inclement natural conditions may affect human health (Lugg, 1986).

Researches concerning the percentage of dust particles in the air were no primary task of our expedition groups. They were initiated by one of the scientists when he saw possibilities for it. This may explain the simple method of coniometric by means of a "Conimeter 10" from VEB Carl Zeiss Jena and the unsystematic localization of the measuring points. Coniometrical measurements were taken daily during a voyage which led very far away from the usual searoutes from the Northern to the Southern Hemisphere and during a voyage along the Antarctic coast as well as during a nine months' winter stay in the Soviet Antarctic station Molodezhnaya indoor and outdoor.

Fig. No. 1 shows measuring points respectively the regions where probes were taken.

Fig. No. 2 shows, how a probe by means of a "Conimeter 10" is taken in front the Antarctic coast. The measuring results should be examined under the following aspects:

1. Where is the original source of the particles of the open sea?

2. Are there remarkable differences between the numbers of the
Fig. 1: Atlantic Ocean and the positions of measurement particles at the Antarctic shelf ice coast compared with other sea regions?

3. Which relations can be found between the number of air particles outdoor and indoor the houses of the expedition members.

In order to examine the influence of the wind velocity to the concentrations of particles all measuring data were associated to 4 categories of wind velocity with the exception of the values from the west coast of Europe, the original regions of the Leste and Harmattan wind systems as well as with the exception of raining days or days with snow or fog (Table 1).

Together with an increase of wind velocity we could state an increase of the average number of particles from about 15,000 to nearly 40,000 per litre of air. This increase could be statistically secured at a probability of an error rate of 5 per cent.

Fig. 2: Taking coniometrical data of particles in front of the Antarctic coast