

CMB Observations from the Antarctic Plateau

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Abstract. CMB studies from the Antarctic Plateau are presented.

We used the unique properties of the Antarctic Plateau atmosphere for studies of the fine structures of the Cosmic Microwave Background (CMB):

a) Spectral distortions at decimetric wavelengths. In 1989/1991 we and LBL-Berkeley observed from South Pole (See reference group # 1).

b) Polarization at large angular scales. A correlation polarimeter, tested in Antarctica in 1994 and 1998, now at Testa Grigia (Italian Alps), is ready for observation at Dome C (See reference group # 2).

With IEN Galileo Ferraris (Turin) and IRA-CNR Arcetri we have developed low noise coherent detector systems and fabricated SIS mixers. We are preparing MASTER, a three band SIS system (94, 220 and 345 GHz), for studies of the Sunyaev Zeldovich effect (reference group #3).

We are participating in the following plans for observational facilities: i) proposal for a large sub-mm telescope at the South Pole, ii) Working Group for the Antarctic Center for Sub-millimetric Astronomy at Dome C (reference group #4).

References

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