Abstracts

On the Resolution of Dicke-Type Radiometers

F. Thomsen. "On the Resolution of Dicke-Type Radiometers." 1984 Transactions on Microwave Theory and Techniques 32.2 (Feb. 1984 [T-MTT]): 145-150.

Microwave radiometers for remote sensing of the earth from a satellite are now in service. These are developed from astronomical radiometers designed for detection of interstellar radio sources. The radiometers measure the brightness temperature by comparing the received energy with an intenal noise source at a well-defined radiation temperature. In the astronomical radiometers, it is traditional to use the same amount of time measuring the unknown source and the reference source. This principle has been inherited from the earth-based radiometers. As the earth brightness temperature varies very much due to the movement of the satellite, it is possible to enhance the resolution by rising more time to measure the earth brightness temperature and less time measuring the stable reference source. The possible gain in resolution is limited by the gain fluctuation of the receiver.

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