JOINT COLLOQUIA

25 March 1957

Towards numerical forecasting for the Australian region

by U. Radok

Dr. Radok, University Department of Meteorology, outlined the main theoretical work in the field of numerical forecasting, with special emphasis on the barotropic model and recent modifications introduced to allow for variations in tropopause height and for a better wind approximation than the geostrophic. In the Australian region difficulties are expected to arise from the absence of data especially in the SW quadrant but their true extent can only be judged from actual computations which are being prepared for the CSIRAC computer at Melbourne University. In the discussion Dr. Berson stressed the point that the barotropic model holds not merely for an atmosphere in which the wind does not change with height but also for some level in a fairly realistic baroclinic atmosphere. That level might have to be determined experimentally for Australian conditions.

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At this colloquium Dr. E. Kraus of the Snowy Mountains Authority discussed two topics, summaries of which follow.

The use of polynomial representation in forecasting and climatology

Practically all meteorological and, for that matter, most geophysical observations, have the characteristics of time series or discreet space samples of such continuous quantities as pressure, temperature, salinity and so forth.

Large numbers of observations have often to be represented by an approximate analytical function. This is necessary, particularly if functional relations have to be established between two different time series. Least square representation is one of the means of doing so. There are, however, several disadvantages in orthodox least