M.S.83. SANTHOSH, K.R.–Theoretical Studies on Air Pollution Mateorology in South India–1987–Dr. D.V. Viswanadham.

Theoretical studies are necessary for estimating the probable concentrations of the air borne pollutants emitted from myriad sources, especially for planning

stratagies. It is the atmosphere under different conditions that governs the pollutant dispersal once they enter it. The present thesis deals with the theoretical studies such as atmostpheric dispersal capacity, stability of the atmosphere, surface turbulence and modelling, for selected stations in South India. The thesis has been divided into six chapters.

Chapter 1. Introduction.

A brief introduction to the problem has been presentedd in this chapter.

Chapter 2. Literature Survey, Materials and Methods.

The published work on Air Pollution Meteorology has been reviewed briefly. The source of data and the details of the methods adopted for carrying out the present work have been presented in this chapter along with the merits and demerits of the methods adopted.

Chapter 3. Atmospheric Dispersal Capacity Over South India.

The vertical and the horizontal extent of the atmosphere to which pollutants can be dispersed are estimated for South India. The spatial, seasonal and the diurnal variations of mixing heights and ventilation coefficients have been presented together with the inversion studies. The three hourly wind roses have also been presented.

Chapter 4. Atmospheric Stability and Surface Turbulence for Selected Stations in South India.

The Pasquill's stability and its diurnal and seasonal variation has been presented. From the range of wind direction fluctuations, the surface turbulence has been estimated and its diurnal and seasonal variation has been studied. The inter relationship between mixing height, Pasquill's stability and surface turbulence has been studied.

Chapter 5. Spatial Distribution of Pollutant Concentrations by Multiple Stack Gaussian Plume Model for Selectedd Centres in South India.

The spatial distribution of the pollutant concentrations by means of multiple stack Gaussian plume model has been studied for four selected centres in South India. The optimum locations for new industries have been suggested.

Chapter 6. Summary and Conclusions.

A brief summary of the results of the present study is presented. The over all conclusions of the study have been presentedd in this chapter.