Conclusions

Study is mainly based on the solar flux measurements carried out using multi-wavelength solar radiometer (MWR) at the semiarid station, Anantapur. From the above study it is concluded that the temporal variations in AOD values during the period of study showed a significant quasi – periodic oscillations with a period of 2 –10 days. AOD is positively correlated with Relative humidity values. For the Relative humidity more than 40% the correlation between AOD and RH is almost one-to-one correspondence. Low AOD values are observed in the study period at the wavelengths >600 nm. Where as at the shorter wavelengths (λ ≤ 600 nm) AOD is high during the same period.

\( \tau_p \) shows a general decrease as \( \lambda \) increases. But, there is an increase in the magnitude of \( \tau_p \) particularly in the month of May than March and April. This feature is indicative of an increase in the relative concentration of larger particles in the month of May.

The increase in \( \tau_p \) with wind speed (U*) for all the wavelengths with north–west and north-east conditions (from polluted region) suggesting that the prevailing winds are carrying all size of aerosols to the observational site. The winds from the unpolluted site carrying out the small size aerosol particles from the observational site by leaving the relatively larger size aerosols. The winds from the polluted region are domimative and playing a major vole in mass loading to the observational site.

\( \alpha \) is negative (ranging from -0.1 to -1.8) during the study period, indicating a relatively high ratio of large to small particles. This also shows a higher content of anthropogenic aerosols. The turbidity is decreasing form March to April and again increases in the month of May 2002.