D. Narayana
Rao
SRM Research Institute, SRM University, Kattankulathur
Sanjay Mehta, SRM Research Institute, SRM University, Kattankulathur
Oral
Thermodynamic structure of the marine atmospheric boundary layer (MABL) over the Indian Ocean spanning ±30o latitude and 30oE - 110oE longitude is carried out using GPS RO observations during 2006-2016. About 22% of total occultation reaches up to height 100 m which are used to analysed the MABL. The MABL structure is studied using thermodynamic parameters including refractivity. Using these profiles mixed layer, transition layer cloud layer and trade wind inversion layer are identified. For the first time the trade inversion layer is identified directly from the refractivity profile. The top of the trade wind inversion is identified based on the relative invariance of the equivalent and saturated equivalent potential temperatures which are also directly identifiable as the minimum in the refractivity gradient. The magnitude of refractivity gradient at the trade wind inversion is generally greater than that of the top of the mixed layer. Thus ABL height identified using minimum gradient method without taking into account of the trade wind inversion layer will be overestimated. The trade wind inversion height is found to be ranging from ~ 2.0- 5.0 km. Without taking into account of the trade wind inversion, mixed layer is found to be ranging between height 0.5 -3.5 km.
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