STATEMENT

1. The thesis presents the results of an intensive investigation conducted at Ahmedabad on the variations of the total, the meson and soft component, vertical intensities of cosmic rays. Omnidirectional measurements of cosmic ray intensities have been made by many workers at high latitudes, but in the present investigation directional measurement of the intensities have been carried out by counter-telescopes at a low latitude where the daily variation can be studied with advantage.

The results of the present investigation establish,

(1) The nature of daily variation of total, meson and soft-component intensity in the vertical direction. The semi-diurnal components of the intensities have been found to be highly correlated with the semi-diurnal component of the daily barometric pressure variation.

(2) The soft component variation is mostly due to meteorological effects.

(3) There is a residual extraterrestrial component of variation of mesons which is due to continuous solar emission of cosmic rays.

2. The author has included at the end of his thesis a list of 86 references to original papers published in different parts of the world. The thesis mentions the specific information derived from each of them.