ICRC2015

ICRC
The Astroparticle Physics Conference
34th International Cosmic Ray Conference
July 30 - August 6, 2015
The Hague, The Netherlands

Contribution ID: **159** Type: **Oral contribution**

RELEVANCE OF LONG TERM TIME –SERIES OF ATMOSPHERIC PARAMETERS AT A MOUNTAIN OBSERVATORY TO MODELS FOR CLIMATE CHANGE

Tuesday 4 August 2015 15:45 (15 minutes)

A detailed analysis has been made of annual meteorological, and cosmic ray, data from the Lomnicky stit mountain observatory (2634 masl), from the standpoint of looking for possible solar cycle (including cosmic ray) manifestations. Interestingly, it is found that taking the two 'recent' Solar Cycle periods (SC 22 and 23), the measured 'cloud cover' is nearly linearly proportional to the satellite –measured mean Global Low Cloud Cover (LCC), but with different coefficients. The linearity allows us to check the assertion that the Global LCC is dependent on the cosmic ray intensity; the reason for the difference in the coefficients will be considered elsewhere.
Apart from the Pressure, Sunspot number correlation, we find no significant Solar Cycle dependence (i.e. difference from one Cycle to the next) of the relationship between local temperature and pressure, cloud cover and pressure, cloud cover and Sunspot Number, and cloud cover and cosmic rays, corrected for atmospheric pressure, or not, in contrast with the results of others for the cloud cover, cosmic ray intensity correlation. The apparent rise in cloud cover with increasing cosmic ray intensity is smaller than found by others and is, in our view, due at least in part to atmospheric pressure effects.

Collaboration

– not specified –

Registration number following "ICRC2015-I/"

0173

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Session Classification: Parallel SH 07 Modulation I

Track Classification: SH-EX