Machine Learning applied to air shower studies at DEASA

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Abstract. The author describes the air showers simulated in CORSIKA [1] and studies associated with them. The cosmic rays with energies greater than 10 TeV have a low flux, thus detected through the cascade of secondary particles reaching ground level detectors. The uncertainty involved in the parameters such as longitudinal and lateral development leads to fluctuations in the analysis. The user extracts information from this huge data generated by CORSIKA[2] to estimate the mass and energy of the primary cosmic ray based on different methods with big data algorithms [3]. The use of artificial neural networks[4] is used to reconstruct the mass composition in high energy cosmic rays. These techniques can be used with real EAS events to predict important parameters which cannot be done with statistical methods[5].

Keywords: Deasa, Air shower, Corsika,Neural network.

References

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