## **Ultra High Energy Cosmic Rays 2018**



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## Ultra high energy cosmic rays simulations with CONEX code

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Nowadays, ultra high energy cosmic rays (UHECR) are subject to intense research of great interest. The existence of such rays with an energy above  $10^{20}$  eV is contradicted by the limit GZK due to photo-pion production, or by nuclei photo-disintegration, in the interaction of UHECR with the cosmic microwave background. In this work, detailed simulations of extensive air showers have been carried out with the help of CONEX program in order to evaluate the shower maximum depth longitudinal profile,  $X_{max}$ . This parameter and its fluctuations are very sensitive to the primary particle mass.

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