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UHECR production in AGN jets

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Active galactic nuclei (AGNs) are one of the most promising sources for accelerating particles up to the highest energies. In this talk, we present a scenario in which cosmic rays are accelerated in multiple shocks created by the interaction of relativistic AGN jets with embedded massive stars. We solve the Fokker-Planck equation considering the spatial and radiative losses as well as the collective effect of the shocks and the reacceleration of the particles. Finally, we calculate the maximum energies that the particles can achieve and discuss the possibility of producing ultra-high energy cosmic rays in this astrophysical situation.

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