



## **ASTROPHYSICS SEMINAR**

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## Signatures of UHECR Sources

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**Abstract.** The losses ultra high energy cosmic rays (UHECR) undergo both in their source environment and outside the source in extragalactic space are discussed. For UHECR sources the example case of AGN is used. Uncertainties in the environments both inside and outside the source are addressed, with the corresponding uncertainties in the subsequent interaction rates being highlighted. Signatures of the presence of these particles in these environments are explored, with the photon fraction of the arriving UHECR at Earth being used to demonstrate the effectiveness of this approach.