UHECRs and by-products meV photons Air showers · Particle sampling eV photons · Fluorescence \rightarrow (α , δ), E, Xmax → y-rays **EeV-ZeV** cosmic rays Long gammaray burst electromagnetic emission MICRO key modeling points · Catalogs tracing AGN and GRB activity, e.g.: Alves Batista+, Front. Astron. Space Sci. 6 (2019) 23 Radio catalogs of AGNs (Bochum, Wuppertal) IceCube HESE, vu 6yr Fermi EGB KASCADE Auger 2016 IceCube EHE 9vr Infrared mapping of star formation rate (Orsay) 10^{-6} Auger 2017 **Jetted Active** · UHECR propagation, including: 10-**Galactic Nucleus** In-source propagation: jet Escape, time spread: host galaxy, cluster 10^{-9} Intergalactic medium Cosmogenic y 10-10 · Neutral secondaries TeV-PeV neutrinos (IceCube, KM3NeT) 10^{-11} Cosmogenic GeV-TeV gamma rays (Fermi-LAT, CTA) (optimistic) 10^{-12} 10^{3} 105 10⁷ 109 10^{11} 10¹ E[GeV]