ICRC

The Astroparticle Physics Conference

34th International Cosmic Ray Conference
July 30 - August 6, 2015
The Hague, The Netherlands

Contribution ID: **521**   Type: **Poster contribution**

The Influence of Magnetic Fields on UHECR Propagation from Virgo A

Thursday 30 July 2015 15:30 (1 hour)

Active galactic nuclei (AGN) are considered as one of the most appropriate sources of cosmic rays with energy exceeding $\sim 10^{18}$ eV. Virgo A (M87 or NGC 4486) is the second closest to the Milky Way active galaxy. According to existing estimations it can be a prominent source of ultra high energy cosmic rays (UHECR). However not many events have been registered in the sky region near Virgo A, possibly due to magnetic field influence.

In present work we check UHECR events from recent sets of data (AUGER, Telescope Array etc.) for possibility of their origination in this AGN. We carried out the simulation of UHECR motion from Virgo A taking into account their deflections in galactic (GMF) as well as extragalactic (EGMF) magnetic fields according to several latest models. The maps of expected UHECR arrival directions have been obtained as a result.

It has been found following: 1) UHECR deflection caused by EGMF is comparable with GMF one, moreover the influence of EGMF sometimes is dominating; 2) effect of EGMF demonstrates obvious asymmetry in final distribution of expected UHECR arrival directions; 3) the results of simulation depend on chosen GMF model and are still open for further discussion.

Collaboration

– not specified –

Registration number following "ICRC2015-I/"

304

Author: KOBZAR, Oleh (Institute of Nuclear Physics, Polish Academy of Sciences)

Co-authors: Prof. HNATYK, Bohdan (Astronomical Observatory of Taras Shevchenko National University of Kyiv, Ukraine); Mr SUSHCHOV, Olexandr (Chernihiv National Pedagogical University, Ukraine); Dr MARCHENKO, Volodymyr (Astronomical Observatory of the Jagiellonian University, Poland)

Presenter: KOBZAR, Oleh (Institute of Nuclear Physics, Polish Academy of Sciences)

Session Classification: Poster 1 CR

Track Classification: CR-TH