

## T 407 Kosmische Strahlung III

Zeit: Mittwoch 16:20–18:35

Raum: HG2-HS3

T 407.1 Mi 16:20 HG2-HS3

**Spektrale Energieverteilung von 1ES1218+304** — •THOMAS BRETZ<sup>1</sup>, DANIELA DORNER<sup>1</sup>, TANJA KNEISKE<sup>2</sup>, DANIEL MAZIN<sup>3</sup> und MARKUS MEYER<sup>1</sup> für die MAGIC-Kollaboration — <sup>1</sup>Universität Würzburg, Am Hubland, 97074 Würzburg — <sup>2</sup>University of Adelaide, Adelaide, Australia — <sup>3</sup>Max-Planck-Institut für Physik, Föhringer Ring 6, 80805 München

CONFERENCE: DPG2006 AUTHORS: COAUTHORS: D. Dorner, T. Kneiske, P. Majumdar, D. Mazin

TITLE:

Wir untersuchen die spektrale Energieverteilung des mit dem MAGIC Teleskop beobachteten BL Lac Objekts 1ES1218+304 ( $z=0.182$ ) vom Radio- bis in den VHE Gammabereich anhand von Modellen der leptonischen und hadronisch-induzierten Strahlungsprozesse in relativistischen Jets.

T 407.2 Mi 16:35 HG2-HS3

**Intrinsic spectrum of 1ES1218+304 at Very High Energies** — •DANIEL MAZIN<sup>1</sup>, TANJA KNEISKE<sup>2</sup>, THOMAS BRETZ<sup>3</sup>, and MARKUS MEYER<sup>3</sup> — <sup>1</sup>Max-Planck-Institut für Physik, Föhringer Ring 6, 80805 München — <sup>2</sup>Department of Physics, University of Adelaide, 5005 Australia — <sup>3</sup>Lehrstuhl für Astronomie, Am Hubland, D-97074 Würzburg

A distant Active Galactic Nuclei 1ES1218+304 ( $z=0.182$ ) has been detected above 100 GeV with the MAGIC Telescope. Since 1ES1218+304 is very distant object, the measured differential energy spectrum at these very high energies has strong imprint of attenuation due to gamma-gamma pair production. In order to determine the intrinsic spectrum of 1ES1218+304, knowledge about the evolving Extragalactic Background Light (EBL) which is the source of the low energy photons is required. However, despite strong progress in the modelling of the EBL and in the direct measurements of it in the last years, its level remains unknown by a factor of 2 within the models and by a factor of 4 for the direct measurements. Here we discuss possible scenarios for the intrinsic spectrum of 1ES1218+304, their consistency with leptonic and hadronic models, and potential constraints on the level of the EBL.

T 407.3 Mi 16:50 HG2-HS3

**H.E.S.S. Beobachtungen von RX J0852.0–4622** — •ULLRICH SCHWANKE für die H.E.S.S.-Kollaboration — Humboldt-Universität zu Berlin, Institut für Physik, Newtonstr. 15, 12489 Berlin

Supernovareste vom Schalentyp werden als mögliche Quellen der geladenen Kosmischen Strahlung bis zum Knie bei etwa  $10^{15}$  eV diskutiert. Das H.E.S.S.-Experiment, ein System von vier abbildenden Cherenkov-Teleskopen in Namibia, hat zwei derartige Supernovareste als ausgedehnte Quellen hochenergetischer Gammastrahlung ( $E > 100$  GeV) identifiziert und damit den Nachweis für die Beschleunigung von Teilchen auf Energien größer als 10 TeV erbracht. Der Beitrag präsentiert neue Ergebnisse von Beobachtungen eines der zwei Objekte (RX J0852.0–4622). Die um einen Faktor 7 auf etwa 20 h erhöhte Beobachtungszeit erlaubt detaillierte Untersuchungen zur Morphologie und zum Energiespektrum.

T 407.4 Mi 17:05 HG2-HS3

**Detection of VHE gamma-rays from the BL Lac object 1ES2344+514 with the MAGIC telescope.** — •DANIEL HÖHNE<sup>1</sup>, MARKUS MEYER<sup>1</sup>, THOMAS BRETZ<sup>1</sup>, DANIELA DORNER<sup>1</sup>, ABELARDO MORALEJO<sup>2</sup>, and ROBERT WAGNER<sup>2</sup> for the MAGIC collaboration — <sup>1</sup>Universität Würzburg, Am Hubland, 97074 Würzburg — <sup>2</sup>Max Planck Institut für Physik, Föhringer Ring 6, 80805 München

The high frequency peaked BL Lac object 1ES 2344+514, at a redshift  $z=0.044$ , was observed in August and September 2005, using the MAGIC Imaging Air Cherenkov telescope. The source was first detected at energies above 350 GeV by the Whipple collaboration in a state of high activity. We confirm the object as a source of VHE gamma rays, extending the measured energy range to lower energies. First results of the analysis will be shown.

T 407.5 Mi 17:20 HG2-HS3

**Detection of VHE Gamma-rays above 100 GeV from the BL Lac object 1ES1218+304** — •MARKUS MEYER<sup>1</sup>, THOMAS BRETZ<sup>1</sup>, DANIELA DORNER<sup>1</sup>, DANIEL KRANICH<sup>2</sup>, PRATIK MAJUMDAR<sup>3</sup>, and DANIEL MAZIN<sup>3</sup> for the MAGIC collaboration — <sup>1</sup>Universität Würzburg, D-97974 Würzburg, Germany — <sup>2</sup>ETH Hönggerberg, CH-8093 Zürich, Switzerland — <sup>3</sup>Max-Planck-Institut für Physik, D-80805, München, Germany

The high frequency peaked BL Lac object 1ES1218+304 at a redshift of  $z=0.182$  was observed in January 2005, using the MAGIC Imaging Air Cherenkov telescope. Gamma-rays above  $\sim 100$  GeV are detected. The spectrum can be well described by a steep power law.

T 407.6 Mi 17:35 HG2-HS3

**Spectral and temporal properties of the Mkn 501 flare in July 2005** — •ROBERT WAGNER, JOSE ANTONIO COARASA, and DAVID PANEQUE for the MAGIC collaboration — Max-Planck-Institut für Physik, Föhringer Ring 6, 80805 München

The MAGIC telescope observed the active galactic nucleus Mkn 501 during summer 2005. During the observations a flare with peak intensities of 4 times the Crab flux could be recorded. An analysis with unprecedented timing resolution both for the high flux states and for semi-quiet states before and after the flare was carried out.

Here we present results of spectral and temporal analyses of the summer 2005 Mkn 501 dataset.

T 407.7 Mi 17:50 HG2-HS3

**Nachweis der Radiogalaxie M 87 im TeV-Energiebereich mit den H.E.S.S.-Cherenkov-Teleskopen** — •MATTHIAS BEILICKE für die H.E.S.S.-Kollaboration — Institut für Experimentalphysik, Universität Hamburg, Luruper Chaussee 149, 22761 Hamburg

Motiviert durch die Messung der Radio-Galaxie M 87 im TeV-Energiebereich mit einer statistischen Signifikanz von  $4.7\sigma$  mit HEGRA wurde M 87 in den Jahren 2003–2005 mit den H.E.S.S.-Teleskopen in Namibia beobachtet. Es wurde sowohl in 2004 als auch in 2005 ein signifikanter Ereignisüberschuss ( $> 5\sigma$ ) aus der Richtung von M 87 gemessen. Hierdurch konnte M 87 als erste extragalaktische TeV- $\gamma$ -Quelle etabliert werden, die nicht zur Klasse der Blazare gehört. Die Ergebnisse der H.E.S.S.-Beobachtungen der Jahre 2003 bis 2005 einschließlich der Untersuchungen zu variabler Emission werden präsentiert.

T 407.8 Mi 18:05 HG2-HS3

**Observations of the Giant Radio Galaxy M87 in the 100 GeV Energy Domain with the MAGIC Telescope** — •JORDI ALBERT and THOMAS BRETZ for the MAGIC Collaboration collaboration — Institut für Theoretische Physik und Astrophysik der Universität Würzburg, Am Hubland, 97074 Würzburg

The giant radio galaxy M87, one of the most interesting active galaxies because of its dimensions and proximity, has been subject to extensive investigations from radio to X-ray wavebands, and recently also in gamma rays. Preliminary results from the observation campaign carried out with the MAGIC Cherenkov Telescope in spring 2005 and winter 2006, operating in the unexplored 100 GeV energy domain of gamma rays from M87, will be presented. Testing models for radiation processes in large scale non-thermal jets and origin of the high-energy extragalactic cosmic rays, as well as indirect search for dark matter, are the main motivations for these observations.

T 407.9 Mi 18:20 HG2-HS3

**Photons at the end of the cosmic-ray spectrum?** — •MARKUS RISSE<sup>1,2</sup>, PIOTR HOMOLA<sup>2</sup>, RALPH ENGEL<sup>1</sup>, DARIUSZ GORA<sup>2,3</sup>, DIETER HECK<sup>1</sup>, JAN PEKALA<sup>2</sup>, BARBARA WILCZYNSKA<sup>2</sup>, and HENRYK WILCZYNSKI<sup>2</sup> — <sup>1</sup>Forschungszentrum Karlsruhe, Institut für Kernphysik, 76021 Karlsruhe — <sup>2</sup>Institute of Nuclear Physics PAN, 31-342 Krakow, Poland — <sup>3</sup>Universität Karlsruhe, Institut für Experimentelle Kernphysik, 76021 Karlsruhe

Photons above 10 EeV might provide a key for understanding the origin of cosmic rays. Substantial fluxes of these ultrahigh-energy (UHE) photons are predicted in top-down models of cosmic-ray origin. UHE photons are also produced by the GZK process of resonant photoproduction of pions, in analogy to GZK neutrinos. Experimentally, UHE

photons can be discriminated from nuclear primaries due to differences in the expected air shower signatures. So far, no photon detection has been claimed. In this work, recent results on upper limits to the fraction of photons are presented. The statistics collected so far already allows us to constrain some top-down models. With increasing data statistics from the Pierre Auger Observatory, further constraints are expected.