



H.E.S.S. observations of galaxy clusters

W. DOMAINKO¹, W. BENBOW¹, J. A. HINTON², O. MARTINEAU-HUYNH³, M. DE NAUROIS³, D. NEDBAL⁴, G. PEDALETTI⁵, G. ROWELL⁶ FOR THE H.E.S.S. COLLABORATION.

¹*Max-Planck-Institut für Kernphysik, Heidelberg, Germany*

²*School of Physics & Astronomy University of Leeds, UK*

³*Laboratoire de Physique Nucléaire et de Hautes Energies, Universités Paris VI & VII, France*

⁴*Institute of Particle and Nuclear Physics, Charles University, Prague, Czech Republic*

⁵*Landessternwarte, Universität Heidelberg, Germany*

⁶*School of Chemistry & Physics, University of Adelaide, Australia*

wilfried.domainko@mpi-hd.mpg.de

Abstract: Clusters of galaxies, the largest gravitationally bound objects in the universe, are expected to contain a significant population of hadronic and leptonic cosmic rays. Potential sources for these particles are merger and accretion shocks, starburst driven galactic winds and radio galaxies. Furthermore, since galaxy clusters confine cosmic ray protons up to energies of at least 1 PeV for a time longer than the Hubble time they act as storehouses and accumulate all the hadronic particles which are accelerated within them. Consequently clusters of galaxies are potential sources of VHE (> 100 GeV) gamma rays. Motivated by these considerations, promising galaxy clusters are observed with the H.E.S.S. experiment as part of an ongoing campaign. Results will be given in the post-conference version of the proceedings.