

Publications of the Infrared-Astronomy Group

Max Planck Institute for Radio Astronomy

2010

Refereed and Invited Papers

Abraham, J., Abreu, P., Aglietta, M., ... Biermann, P. L., ... Caramete, L., ... Curutiu, A., ... Dutan, I., ... et al.: Measurement of the depth of maximum of extensive air showers above 10^{18} eV. *Physical Review Letters* **104**, 091101 (2010).

Abraham, J., Abreu, P., Aglietta, M., ... Biermann, P. L., ... Caramete, L., ... Curutiu, A., ... Dutan, I., ... et al.: A study of the effect of molecular and aerosol conditions in the atmosphere on air fluorescence measurements at the Pierre Auger Observatory. *Astroparticle Physics* **33**, 108-129 (2010).

Abraham, J., Abreu, P., Aglietta, M., ... Biermann, P. L., ... Caramete, L., ... Curutiu, A., ... Dutan, I., ... et al.: Trigger and aperture of the surface detector array of the Pierre Auger Observatory. *Nuclear Instruments and Methods in Physics Research Section A* **613**, No. 1, 29-39 (2010).

Abraham, J., Abreu, P., Aglietta, M., ... Biermann, P. L., ... Caramete, L., ... Curutiu, A., ... Dutan, I., ... et al.: Measurement of the energy spectrum of cosmic rays above 10^{18} eV using the Pierre Auger Observatory. *Physics Letters B*, **685**, No. 4-5, 239-246 (2010).

Apel, W. D., Arteaga, J. C., Asch, T., ... Biermann, P. L., ... Zensus, J. A., ... et al.: Lateral distribution of the radio signal in extensive air showers measured with LOPES. *Astroparticle Physics* **32**, 294-303 (2010).

Benisty, M., Malbet, F., Dougados, C., Natta, A., Le Bouquin, J. B., Massi, F., Bonnefoy, M., Bouvier, J., Chauvin, G., Chesneau, O., Garcia, P. J. V., Grankin, K., Isella, A., Ratzka, T., Tatulli, E., Testi, L., Weigelt, G., Whelan, E. T.: The 2008 outburst in the young stellar system Z CMa. I. Evidence of an enhanced bipolar wind on the AU-scale. *A&A* **517**, L3 (2010).

Benisty, M., Natta, A., Isella, A., Berger, J.-P., Massi, F., Le Bouquin, J.-B., Mérand, A., Duvert, G., Kraus, S., Malbet, F., Olofsson, J., Robbe-Dubois, S., Testi, L., Vannier, M., Weigelt, G.: Strong near-infrared emission in the sub-AU disk of the Herbig Ae star HD 163296: evidence of refractory dust?, *A&A*, **511**, A74(1-14) (2010)

Biermann, P. L., Becker, J. K., Caceres, G., Meli, A., Seo, E.-S., Stanev, T.: The WMAP haze from the Galactic Center region due to massive star explosions and a reduced cosmic ray scale height. *Astrophys. J.* **710**, L53-L57 (2010).

Biermann, P. L., Becker, J. K., Dreyer, J., Meli, A., Seo, E.-S., Stanev, T.: The origin of cosmic rays: explosions of massive stars with magnetic winds and their supernova mechanism. *Astrophys. J.* **725**, 184-187 (2010).

Britzen, S., Kudryavtseva, N. A., Witzel, A., Campbell, R. M., Ros, E., Karouzos, M., Mehta, A., Aller, M. F., Aller, H. D., Beckert, T., Zensus, J. A.: The kinematics in the pc-scale jets of AGN: The case of S5 1803+784. *Astron. Astrophys.* **511**, A57 (2010).

Burtscher, L., Meisenheimer, K., Jaffe, W., Tristram, K. R. W., Röttgering, H. J. A.: Resolving the nucleus of Centaurus A at mid-infrared wavelengths. *Publications of the Astronomical Society of Australia* **27**, 490-495 (2010).

Caramete, L. I., Biermann, P. L.: The mass function of nearby black hole candidates. *A&A* **521**, A55 (2010).

Chesneau, O., Dessart, L., Mourard, D., Béria, Ph., Buil, Ch., Bonneau, D., Borges Fernandes, M., Clausse, J. M., Delaa, O., Marcotto, A., Meilland, A., Millour, F., Nardetto, N., Perraut, K., Roussel, A., Spang, A., Stee, P., Tallon-Bosc, I., McAlister, H., Ten Brummelaar, T., Sturmann, J., Sturmann, L., Turner, N., Farrington, C., Goldfinger, P. J.: Time, spatial, and spectral resolution of the H alpha line-formation region of Deneb and Rigel with the VEGA/CHARA interferometer. *A&A* **521**, A5 (2010).

Chiavassa, A., Lacour, S., Millour, F., Driebe, T., Wittkowski, M., Plez, B., Thiebaut, E., Josselin, E., Freytag, B., Scholz, M., Haubois, X.: VLTI/AMBER spectro-interferometric imaging of VX Sagittarii's inhomogenous outer atmosphere. *A&A*, **511** A51 (2010)

Gergely, L. Á., Biermann, P. L., Caramete, L. I.: Supermassive black hole spin-flip during the inspiral. *Classical and Quantum Gravity* **27**, 194009 (2010).

Gopal-Krishna, Biermann, P. L., de Souza, V., Wiita, P. J.: Ultra-high-energy cosmic rays from Centaurus A: jet interaction with gaseous shells. *Astrophys. J.* **720**, L155-L158 (2010).

*Groh, J. H., Madura, T. I., Owocki, S. P., Hillier, D. J., Weigelt, G.: Is Eta Carinae a fast rotator, and how much does the companion influence the inner wind structure? *Astrophys. J.* **716**, L223-L228 (2010).*

*Groh, J., Nielsen, K., Damineli, A., Gull, T., Madura, T., Hillier, D.J., Teodoro, M., Driebe, T., Weigelt, G., Hartman, H., Kerber, F., Okazaki, A., Owocki, S., Millour, F., Murakawa, K., Kraus, S., Hofmann, K.-H., Schertl, D.: Detection of high-velocity material from the wind-wind collision zone of Eta Carinae across the 2009.0 periastron passage, *A&A*, **517**, A9 (2010)*

*Hönig, S. F., Kishimoto, M.: The dusty heart of nearby active galaxies. II. From clumpy torus models to physical properties of dust around AGN. *A&A* **523**, A27 (2010).*

*Hönig, S. F., Kishimoto, M., Gandhi, P., Smette, A., Asmus, D., Duschl, W., Polletta, M., Weigelt, G.: The dusty heart of nearby active galaxies. I. High-spatial resolution mid-IR spectro-photometry of Seyfert galaxies, *A&A*, **515**, A23 (2010)*

*Kraus, S., Hofmann, K.-H., Menten, K. M., Schertl, D., Weigelt, G., Wyrowski, F., Meilland, A., Perraut, K., Petrov, R., Robbe-Dubois, S., Schilke, P., Testi, L.: A hot compact dust disk around a massive young stellar object. *Nature* **466**, 339-342 (2010).*

*Liermann, A., Kraus, M., Schnurr, O., Borges Fernandes, M.: The 13 carbon footprint of B[e] supergiants. *Mon. Not. R. Astron. Soc.* **408**, L6-L10 (2010).*

*Meilland, A., Kanaan, S., Borges Fernandes, M., Chesneau, O., Millour, F., Stee, Ph., Lopez, B.: Resolving the dusty circumstellar environment of the A[e] supergiant HD 62623 with the VLTI/MIDI. *A&A* **512**, A73 (2010).*

*Mikolajewska, J., Balega, Y., Hofmann, K.-H., Weigelt, G.: First spatial resolution of the stellar components of the interacting binary CH Cygni, *MNRAS Letters*, **403**, Issue 1, pp. L21-L25*

Millour, F. (invited): Hot stars and interferometry, Proceedings of "The interferometric view on hot stars" conference; RevMexAA, in press (2010)

*Murakawa, K.: Polarization disks in near-infrared high-resolution imaging. *A&A*, **518**, A63 (2010).*

*Murakawa, K.: Radiative transfer modeling of the dust disk of the Herbig Be star R Monocerotis. *A&A*, **522**, A46, (2010).*

*Murakawa, K., Ueta, T., Meixner, M.: Evidence of grain growth in the disk of the bipolar proto-planetary nebula M 1-92, *A&A*, **510**, A30 (2010)*

*Pierre AUGER Collaboration, ... Biermann, P. L., ... Caramete, L., ... Curutiu, A., ... Dutan, I. ... et al.: The fluorescence detector of the Pierre Auger Observatory. *Nuclear Instruments and Methods in Physics Research Section A* **620**, No. 2-3, 227-251 (2010).*

*Pierre AUGER Collaboration, ... Biermann, P. L., ... Caramete, L., ... Curutiu, A., ... Dutan, I. ... et al.: Update on the correlation of the highest energy cosmic rays with nearby extragalactic matter. *Astroparticle Physics* **34**, 314-326 (2010).*

*Prieto, M. A., Reunanen, J., Tristram, K. R. W., Neumayer, N., Fernandez-Ontiveros, J. A., Orienti, M., Meisenheimer, K.: The spectral energy distribution of the central parsecs of the nearest AGN. *Mon. Not. R. Astron. Soc.* **402**, 724-744 (2010).*

*Schröder, F. G., Apel, W. D., Arteaga, J. C., ... Biermann, P. L., ... Zensus, J. A. ... et al.: Measuring the radio emission of cosmic ray air showers with LOPES. *Nuclear Instruments and Methods. In: Physics Research Section A* **617**, No. 1-3, 515-516 (2010).*

*Vannier, M., Mary, D., Millour, F., Petrov, R. G., Bourguignon, S., Theys, C.: Spectral regularization and sparse representation bases for interferometric imaging Optical and Infrared Interferometry II. Edited by Danchi, William C.; Delplancke, Françoise; Rajagopal, Jayadev K. *Proceedings of the SPIE*, Volume **7734**, pp. 77342J-77342J-15 (2010).*

Absil, O., Defrère, D., Roberge, A., Augereau, J.-C., Coudé Du Foresto, V., Hanot, C., Stark, C., Surdej, J.: Direct imaging of earth-like planets: why we care about exozodis. In: Optical and Infrared Interferometry II. (Eds.) Danchi, W. C.; Delplancke, F.; Rajagopal, J. K. Proceedings of the SPIE No. 7734, SPIE, Bellingham 2010, 77340L-77340L-10.

Demangeon, O., Ollivier, M., Le Duigou, J.-M., Cassaing, F., Coudé Du Foresto, V., Mourard, D., Kern, P., Lam Trong, T., Evrard, J., Absil, O., Defrère, D., Lopez, B.: Potential of balloon payloads for in flight validation of direct and nulling interferometry concepts. In: Optical and Infrared Interferometry II. (Eds.) Danchi, W. C., Delplancke, F., Rajagopal, J. K. Proceedings of the SPIE No. 7734, SPIE, Bellingham 2010, 77340L-77340L-6.

Defrère, D., Absil, O., di Folco, E., Coudé Du Foresto, V., Mérand, A., Augereau, J.-C.: Infrared interferometric observations of nearby exozodiacal disks: current status and perspectives. Proceedings of the conference In the Spirit of Lyot 2010: Direct Detection of Exoplanets and Circumstellar Disks. October 25 - 29, 2010. University of Paris Diderot, Paris, France. Edited by Anthony Boccaletti (2010).

Gandhi, P., Horst, H., Smette, A., Höning, S. F., Comastri, A., Gilli, R., Vignali, C., Duschl, W. J.: Resolved mid-infrared imaging of AGN: an isotropic measure of intrinsic power. AIP Conference Proceedings, Volume 1248, 431-432 (2010).

Gandhi, P., Horst, H., Smette, A., Höning, S. F., Comastri, A., Gilli, R., Vignali, C., Duschl, W. J.: Resolved Mid-Infrared Imaging of AGN: an Isotropic Measure of Intrinsic Power. Proceedings of the International Astronomical Union, IAU Symposium S267, Volume 5, 108 (2010).

Groh, J. H.: Hot and cool: stellar parameters of the prototype LBV AG Carinae across the HR diagram. In: Hot and Cool: Bridging Gaps in Massive Star Evolution. (Eds.) Leitherer, C., Bennett, P.D., Morris, P.W., van Loon, J.Th. Astronomical Society of the Pacific conference series No. 425, Astronomical Society of the Pacific, San Francisco 2010, 215-220.

Groh, J. H.: The winds of the most massive stars as viewed from long-baseline interferometry: model predictions. In: The Interferometric View on Hot Stars. (Eds.) Rivinius, Th., Coré, M. Revista Mexicana de Astronomía y Astrofísica Series de Conferencias No. 38, Instituto de Astronomía, Universidad Nacional Autónoma de México, Mexico 2010, 48-49.

Herbst, T. M., Ragazzoni, R., Eckart, A., Weigelt, G.: Imaging beyond the fringe: an update on the LINC-NIRVANA Fizeau interferometer for the LBT. In: Optical and Infrared Interferometry II. (Eds.) Danchi, W. C.; Delplancke, F.; Rajagopal, J. K. Proceedings of the SPIE No. 7734, SPIE, Bellingham 2010, 773407-773407-7.

Höning, S. F., Hoffmann, K.-H., Kishimoto, M., Tristram, K., Weigelt, G.: Infrared Interferometry of Active Galactic Nuclei. Yearbook of the Max Planck Society 2010.

Kraus, S., Hofmann, K.-H., Preibisch, T., Weigelt, G.: Infrared interferometry of young stellar objects. In: The Interferometric View on Hot Stars. (Eds.) Rivinius, Th.; Coré, M. Revista Mexicana de Astronomía y Astrofísica Series de Conferencias No. 38, Instituto de Astronomía, Universidad Nacional Autónoma de México, Mexico 2010, 63-66.

Kraus, S., Hofmann, K.-H., Menten, K. M., Schertl, D., Weigelt, G., Wyrowski, F., Meiland, A., Perraut, K., Petrov, R., Robbe-Dubois, S., Schilke, P., Testi, L.: First results from VLTI near-infrared interferometry on high-mass young stellar objects. In: Optical and Infrared Interferometry II. (Eds.) Danchi, W. C., Delplancke, F., Rajagopal, J. K. Proceedings of the SPIE No. 7734, SPIE, Bellingham 2010, 773408-773408-11.

Kürster, M., Bertram, T., Borelli, J. L., Brix, M., Gässler, W., Herbst, T. M., Naranjo, V., Pott, J.-U., Trowitzsch, J., Connors, T. E., Hinz, P. M., McMahon, T. J., Ashby, D. S., Brynnel, J. G., Cushing, N. J., Edgin, T., Esguerra, J. D., Green, R. F., Kraus, J., Little, J., Beckmann, U., Weigelt, G. P.: OVMS: the optical path difference and vibration monitoring system for the LBT and its interferometers. In: Optical and Infrared Interferometry II. (Eds.) Danchi, W. C., Delplancke, F., Rajagopal, J. K. Proceedings of the SPIE No. 7734, SPIE, Bellingham 2010, 77342Y-77342Y-8.

Malbet, F., Duvert, G., Millour, F. A., Le Bouquin, J.-B., Mella, G., Halipré, L., Chelli, A., Lafrasse, S., Altariba, E., Zins, G.: The third version of the AMBER data reduction software. Optical and Infrared Interferometry II. Edited by Danchi, W. C., Delplancke, F., Rajagopal, J. K. Proceedings of the SPIE, Volume 7734, pp. 77344C-77344C-12 (2010).

Millour, F.: Hot Stars and Interferometry. The Interferometric View on Hot Stars (Eds. Th. Rivinius & M. Curé) Revista Mexicana de Astronomía y Astrofísica (Serie de Conferencias) Vol. 38, pp. 1-4 (2010).

Müller, A., Pott, J.-U., Morel, S., Abuter, R., van Belle, G., van Boekel, R., Burtscher, L., Delplancke, F., Henning, Th., Jaffe, W., Leinert, Ch., Lopez, B., Matter, A., Meisenheimer, K., Schmid, C., Tristram, K., Verhoeff, A. P.: First results using PRIMA FSU as a fringe tracker for MIDI. In: Optical and Infrared Interferometry II. (Eds.) Danchi, W. C., Delplancke, F., Rajagopal, J. K. Proceedings of the SPIE No. 7734, SPIE, Bellingham 2010, 773420-773420-15.

Muratore, M. F., Kraus, M., Liermann, A., Schnurr, O., Cidale, L. S., Arias, M. L.: Unveiling the evolutionary phase of B[e] supergiants. Boletín de la Asociación Argentina de Astronomía, vol.53, p.123-126 (2010).

Nielsen, K. E., Groh, J. H., Hillier, J., Gull, T. R., Madura, T. I., Owocki, S. P., Okazaki, A. T., Damineli, A., Teodoro, M., Weigelt, G., Hartman, H.: High velocity absorption during Eta Car B's periastron passage. Bull. American Astron. Soc. 42, 341 (2010).

Ohnaka, K.: Spatially-resolved high-spectral resolution observations of the red supergiant Betelgeuse. In: Highlights of Astronomy Vol. 15. (Ed.) Corbett, I.F. Proceedings of the International Astronomical Union No. 6, Cambridge University Press, Cambridge 2010, 552.

Rabien, S., Ageorges, N., Barl, L., Beckmann, U., Blümchen, T., Bonaglia, M., Borelli, J. L., Brynnel, J., Busoni, L., Carbonaro, L., Davies, R., Deisenroth, M., Durney, O., Elberich, M., Esposito, S., Gasho, V., Gässler, W., Gemperlein, H., Genzel, R., Green, R., Haug, M., Hart, M. L., Hubbard, P., Kanneganti, S., Masciadri, E., Noenickx, J., Orban de Xivry, G., Peter, D., Quirrenbach, A., Rademacher, M., Rix, H. W., Salinari, P., Schwab, C., Storm, J., Strüder, L., Thiel, M., Weigelt, G., Ziegleder, J.: ARGOS: the laser guide star system for the LBT. In: Adaptive Optics Systems II. (Eds.) Ellerbroek, B. L., Hart, M., Hubin, N., Wizinowich, P. L. Proceedings of the SPIE No. 7736, SPIE, Bellingham 2010, 77360E-77360E-12.

Richards, A. M. S., Assaf, K., Bains, I., Bartkiewicz, A., Diamond, P. J., Elitzur, M., Etoka, S., Gray, M. D., Humphreys, E., Murakawa, K., Szymczak, M., van Langevelde, H. J., Yates, J. A.: Maser observations - from the kinematics to the physics of evolved star winds. Proceedings of the 10th European VLBI Network Symposium and EVN Users Meeting: VLBI and the new generation of radio arrays. September 20-24, 2010. Manchester, UK. pp 1-6.