

ISC proudly presents the: 7th AIP-Jamboree, November 19, 2015

The rules of the game:

- 2 minutes (2 slides)
- Present yourself and your work
- Get to know the colleagues

Gernot Rosenkranz Administration

Personnel and Legal Affairs Section

(aka Personal und Recht, P&R)

<u>Staff</u>

0

Personnel and Legal Affairs Gernot Rosenkranz

Legal Affairs

o Gernot Rosenkranz

Personnel Affairs

- o Stefanie Berndt
 - Linda Henkel
- o Doreen Hohensee
- o Tanja Meyfarth
- o Gernot Rosenkranz

full time equivalents: 3,75

all together: 57 years of professional experience collected at,



Personnel Affairs

| tasks | | legal b | asis |
|-------|---|------------------|---------------------------------|
| ~ | payroll accounting incl. taxes and social | ≻ | collective labour agreements |
| | contributions | | IV-L and IVOD |
| ~ | managing and calculating reimbursements | | grant letter (Zuwendungsbes- |
| | of travel expenses | | cheid) as well as single direc- |
| ✓ | issuing labour contracts and hosting agree- | | tives from the federal and the |
| ✓ | managing applications for vacation | | WissZeitVG - law regulates la- |
| 1 | managing the nersonnel information sys- | | hour condition in science |
| | tem keening nersonnel data | | BUrlG - law about vacation |
| 1 | issuing attestations for the unemployment | | BetrVG - law about the rights |
| | offices the Aliens Authority your landlord | | of the employees and work |
| | bank, kindergarten etc. | | council |
| ✓ | nersonnel services and counselling esp. for | \triangleright | SGB - Code of Social Law |
| | foreigners | | books I to XII |
| ✓ | correspondence with tax authorities. | \triangleright | TzBfG - law regulates tempo- |
| | pensions funds. VBL etc. | | rarv labour contracts and part |
| ✓ | working for annual financial statement and | | time work |
| | in house examinations by tax or pension | \triangleright | EntgfortzG - law about the |
| | fund authorities | | payment when ill |
| ✓ | estimating personnel costs for the institute, | \succ | BGB - Civil Law Code |
| | branches, departments and projects | \succ | AufenthaltsG - law about visa |
| ✓ | providing statistics for EU, German and | \succ | BDSG - German Data Protec- |
| | Brandenburg government, Leibniz- Associa- | | tion Act |
| | tion, board of trustees, executive board, | \succ | ArbZG - law about working |
| | works council, gender equality officer, | | time limits |
| | heads, PIs etc. | \succ | EStG - Income Tax Act |
| ✓ | coordination the training of the appren- | \succ | GewO -Industrial Code |
| | tices | \succ | JArbSchG - Young Persons |
| ✓ | issuing contracts for guests and internships | | Protection of Employment Act |
| | | \succ | MuSchG - law to protect the |
| | | | expectant mother |
| | | \triangleright | BRKG - German Travel Ex- |
| | | | penses Act |
| | | \succ | etc |

<u>Tools</u>

software LOGA for salary accounting, personal data base, personnel information system is using an relational database system



6100 Lo

Software is maintained in ASP-model. This means P&R is responsible for accurate and on time salary accounting and payment of salary, taxes and contributions; the service provider acts on our requests. The servers are located in north-west Germany.

Dimensions (2014):

- ✓ personal costs: ca. 10.200.000,00 € 🤇
- ✓ ca. 220 different types of salary
- ✓ annual payroll journal: 3647 pages
- ✓ travel expenses: ca. 470.000,00 €



<u>Legal Affairs</u>

| tasks | | legal basis | |
|-------|---|---|------|
| | creating contracts for deliver- ing of software, hardware, ser- vices, cooperation, MoU, LoI in German and English negotiating of contracts identifying, evaluating and warding of legal risks in busi- ness operations of the AIP debates and discussions with the works council proceeding lawsuits at courts of first instance or guiding ex- ternal lawyers at courts of higher instances counselling, briefing and in- structing of experts and man- agement at AIP representative of the AIP at the Working Committee for Le- gal and HR Matters at the Leib- niz-Association; representative of the Leibniz-Association at the Working Committee for HR Matters of the Helmholtz-Asso- ciation | HGB - Commercial Code BGB - Civil Law Code ZPO - Civil Process Order StGB- Criminal Code OwiG - Administrative Offences Act international legal rules InsO - Insolvency Act EStR, LohnStR - Wage Tax Guidelines AGG - General Equal Treatment Act ArbGG - Labour Process Order etc. | AT-O |
| | CLASECK CALENCE | | 1 |

Tanya Urrutia Galaxies and Quasars





Guatemala



Potsdam 1997-2002





California 2002-2011







The MUSE spaghetti monster

Quasar evolution & demographics





F2M0841+3604





F2M1118-0033



Quasar triggering in red quasars through mergers. Strong winds seen \rightarrow affect host?



Jakob Walcher Galaxies and Quasars

C. Jakob Walcher (Science Staff)

50% Science: Stars in galaxies, when and where?

- Spectral energy distribution analysis
- Element abundances
- Galaxy nuclei
- Imaging spectroscopy galaxy surveys (CALIFA, SAMI, MUSE, ELT-MOS)

50% Instrumentation: 4MOST Operations

- Agree with ESO on operations model
- Coordinate
 software packages
- Oversee development of data flow

AIP





19.11.2014

Chia-Sun (Albert) Chuang Cosomology



Dr. Chia-Hsun Chuang (Albert) Taiwan

Extracting cosmological constraints from large-scale structure of galaxy clustering



Sloan Digital Sky Survey (SDSS) / Baryon Oscillation Sky Survey (BOSS) collected 1.35M galaxy redshift up to z=0.7



Compute correlation function of the galaxy sample and measure baryon acoustic oscillation and redshift distortion



Cosmological implication from the galaxy clustering measurements and other data sets (e.g. CMB, SN1a, etc)

Baryon Acoustic Oscillation from Void Clustering

Signatures of the primordial Universe from its emptiness

Francisco-Shu Kitaura¹, Chia-Hsun Chuang¹, Yu Liang², Cheng Zhao², Charling Tao^{3,2}, Sergio Rodríguez-Torres^{4,5,6}, Daniel J. Eisenstein⁷, Héctor Gil-Marín^{8,9}, Jean-Paul Kneib¹⁰, Cameron McBride⁷, Will Percival¹¹, Ashley J. Ross^{12,13}, Ariel G. Sánchez¹⁴, Jeremy Tinker¹⁵, Rita Tojeiro¹⁶, Mariana Vargas-Magana¹⁷, Gong-Bo Zhao^{18,11}
 ¹Leibniz-Institut für Astrophysik Potsdam (AIP), An der Sternwarte 16, D-14482 Potsdam, Germany
 ²Tsinghua Center of Astrophysics & Department of Physics, Tsinghua University, Beijing 100084, China.
 ³CPPM, Université Aix-Marseille, CNRS/IN2P3, Case 907, 13288 Marseille Cedex 9, France

arXiv:1511.04405, arXiv:1511.04391, arXiv:1511.04299







Dario Fritzewski Stellar Physics and Stellar Activity





Philipp Gast MHD





NASA, ESA, M. Robberto, the Hubble Space Telescope Orion Treasury Project Team and L. Ricci (ESO)

AIP Jamboree (Philipp Gast) / 19-11-2015

Current Project (DFG ISM-SPP):

Shock interaction with GMCs



Questions:

- How do cloud cores form?
- How resilient are they?
- How do they evolve?
- When do they become Jeans unstable?

with Udo Ziegler

- How efficient is this process?

Other Research Interest:

- Low mass star formation
- Disks
- Star formation rate (SFR)
- Numerical simulation of MHD
- Pretty pictures from Clouds

Clemens Konrad High-res Spectroscopy

Short curriculum vitae

- 2010: start at Hochschule RheinMain in Rüsselsheim
- 2014: B.Sc. in engineering physics
- Thesis at Fraunhofer ICT-IMM, Mainz

Topic: Holographic optical gratings made from collodial AuNP

- Since 2014: Applied Physics also at HS-RM
- Now: M.Sc. Thesis at AIP

Characterization of PEPSI-Spectrophraph

- Resolution limited by ambient conditions
- Sprectrograph in T,p,H stabilized chamber



Rikke Lund Saust Galaxies and Quasars



Niels Bohr Institutet



PhD at AIP since July 2015

Lyman-alpha Emitting Haloes of UV-Bright Galaxies





Sarah Jane Schmidt Schwarzschild Fellow

Sarah Jane Schmidt



I work with observations and survey data

Undergraduate: Barnard College Graduate: University of Washington Postdoc: Ohio State University

> stellar pops

magnetic
activity

large surveys

cool stars

> ultracool dwarfs brown dwarfs

detecting M dwarf flares in the IR

ultracool dwarfs flares with Kepler 2

hot chromospheres
HC on cool and
ultracool dwarfs



estimating the ages of ultracool dwarfs with kinematics

SDSS





color, T_{eff}, and [M/H] relations for K6-M2 dwarfs



Sabine Thater Galaxies and Quasars

Coevolution (Or Not)?

Research interest: SMBHs, AGNs, Galaxy morphologies

- Almost all galaxies harbour a SMBH
- Empiricial correlations between BH mass and their host galaxy bulge properties
- Interpretation: Formation of bulges and growth of their SMBHs happened together



SMBH masses from stellar kinematics

$$\varphi_{all} = \varphi (M_{BH}) + MGE * M/L + \varphi(DM)$$

130

120

110

100

Stellar kinematics





h3 1.0 0.10 0.05 0.5 orcsec 0.00 0.0 -0.05 -0.5 -0.10 -1.0 -0.15 -1.0 -0.5 0.0 0.5 1.0 arcsec



MGE surface brightness model



SMBH masses from stellar kinematics



-11

-85

-10 -11

04 41

10

-11

.....





--> Determination of SMBH mass

Ugur Ural Galaxies and Quasars



UĞUR URAL

MILKY WAY AND THE LOCAL VOLUME (2011-2014)

10



Spectroscopy



Simulations http://vo.aip.de/dwarfedmasses/



4MOST: Observability of streams in the Halo



CLASSIFICATION OF EARLY TYPE GALAXIES: Galaxies and Quasars (Since 11/2014)





Michael Weber High-resolution Spectroscopy



High-Resolution Spectroscopy

at AIP since 2000. Current projects are

- STELLA Echelle spectrograph (2005-)
- PEPSI spectropolarimeter (commissioning)
- Gregor@night spectrograph (2016/17)
- E-ELT HIRES contribution, GTC polarimeter







- Doppler Imaging
- Stellar parameters compol stars (also for GaiaESOsurvey)
- Radial velocities of binary stars, 2-dim crosscorrelation



Jörg Weingrill Robotics





Lutz Wisotzki Galaxies and Quasars

Who am I?

Section head "Galaxies & Quasars"



Professor for "Observational Cosmology"



Heavy MUSE User



Expert for Outdoor Cuisine



My Scientific Itinerary



Kris Youakim Milky Way and the Local Volume



Kris Youakim Milky Way and Local Volume

Where I'm from





<u>Academic background</u>

- ➢ BSc Biology (2012)
- BSc Honours Physics (2014)



- PhD candidate at AIP (started Oct 2015)
- Supervisor: Else Starkenburg

<u>Hobbies</u>



Summary

- Looking for early generation stars (low metallicity)
- Narrowband photometry to find stars with potentially low [Fe/H]
- Spectroscopic follow up

Science Goals

- ➤Galactic archaeology
- Constrain models and simulations
- Find new globular clusters, stellar streams, dwarf galaxies

Udo Ziegler MHD

- senior researcher
- since 1999 at AIP
- design/implementation of numerical algorithms for chemo-gravito-magnetohydrodynamics | NIRVANA code (≈90%)

conservation laws - non-ideal effects/dissipation Finite-volume schemes

Riemann solver constrained-transport
 stabilized Runge-Kutta integrators **Poisson equation** + adaptive mesh multi-grid technology + supercomputing/MPI astrochemistry/ionization/micro-physics rate equations stiff ODE integrator

 astrophysics: shock-induced pre-stellar core formation in the ISM / modeling & preliminary studies (≈10%)

