IMPRS and the University Institutes

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Institut für Theoretische Astrophysik
Zentrum für Astronomie
Universität Heidelberg

March 10th, 2009
Outline

1. Overview of the IMPRS-HD
   - Purpose
   - Students
   - Officials

2. The astronomy institutes of Heidelberg University
   - ARI
   - ITA
   - LSW

3. The astronomy institutes of the Max-Planck society (MPG)
   - MPI-K
   - MPIA

4. Scientific and social activities offered by the IMPRS
Graduate school for the doctoral degree in astronomy (physics is also possible).

Established in 2005 as a joint initiative between the Max-Planck society and the University of Heidelberg.

Since 2007/08 independent part of the Heidelberg Graduate School of Fundamental Physics (HGSFP). Umbrella institution for doctoral studies in the department of Physics & Astronomy in Heidelberg.

- Fundamental interactions and cosmology
- Astronomy and cosmic physics (IMPRS-HD)
- Quantum dynamics and complex quantum systems

Strong focus on international students. MPG requirement: > 50% foreign students.
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What IMPRS offers

**Study plan**

- A **thesis committee** consisting of the supervisor and two other expert scientist meets at least once a year.
  - supervises progress of research work
  - defines the curriculum
- IMPRS offers a number of **mandatory astronomy courses**, given at the university.

**Communication**

- IMPRS consists of \( \sim 70 \) students, placed in different generations.
- Central meeting point for each generation is the **IMPRS seminar**.
- Many more scientific and social events are offered by the IMPRS.
Some numbers

- **# of students**: 75
- **German contribution**: \( \sim 30\% \)
- **Female contribution**: \( \sim 35\% \)
- **Alumni**: 13
### IMPRS applications – statistics 2005-2007

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- **German contribution**: ~ 30%
- **Female contribution**: ~ 35%
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### Some numbers

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<tr>
<th>Year</th>
<th>Applicants</th>
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Note: 3 HGSFP arrivals

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<th>20008</th>
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<td></td>
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IMPRS people (without IMPRS board)

Spokespersons:
Hans-Walter Rix (MPI’s)
Stefan Wagner (ZAH)

Coordinator:
Christian Fendt

Secretary:
Heide Seifert

Student representatives:
Steve Boudreault, Giulia Vannoni, Marcello Cacciato, Ros Skelton, Kelly Foyle, Leonard Burtscher, Julian Merten, Mario Gennaro
Astrophysics in Heidelberg

The institutes and the number of IMPRS students

- MPIA (33)
- MPI-K (9)
- ARI (11)
- ITA (15)
- LSW (7)
Astronomisches Rechen-Institut (ARI)

- History goes back to 1700.
- Hosts an GRAPE / MPRACE cluster
- Staff: 84 including students.
- Research at ARI and potential IMPRS supervisors.
  - Astrometry (Stefan Jordan)
  - Stellar dynamics (Andreas Just, Rainer Spurzem)
  - Galaxy evolution (Burkhard Fuchs, Eva Grebel, Thorsten Lisker)
  - Cosmology and gravitational lensing (Joachim Wambsganß, Björn Schäfer)
Institut für Theoretische Astrophysik (ITA)

- Founded in 1976
- Staff: 45 including students.
- Research at ITA and potential IMPRS supervisors.
  - Star formation, interstellar turbulence, molecular cloud dynamics and galactic dynamics (Ralf Klessen, Robi Banerjee).
  - Cosmology, clusters of galaxies, gravitational lenses and CMB (Matthias Bartelmann).
  - Development of stars and physics of planets (Werner Tscharnuter)
  - Stellar atmospheres and astrochemistry (Hans-Peter Gail)
  - Cosmic radiation fields (Rainer Wehrse)
Landessternwarte (LSW)

- Inaugurated in 1898 by the grand duke Friedrich I. of Baden
- Staff: 60 including students.
- Research at LSW and potential IMPRS supervisors.
  - Theory of AGN and compact objects (Max Camenzind).
  - Extragalactic astrophysics (Jochen Heidt, Gerd Pühlhofer, Stefan Wagner)
  - Stellar astrophysics (Joachim Krautter, Sabine Reffert, Otmar Stahl)
  - Galactic archaeology (Norbert Christlieb)
  - Instrumentation (Nicholas Elias, Andreas Quirrenbach)