

DESY summer students at HASYLAB

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Since more than ten years, each summer DESY gives young international students the opportunity to take part in the work of research groups in the fields of accelerator physics, particle detectors, research with synchrotron radiation, information technology, or theoretical physics. Applicants are usually in the third to fourth year of their studies and stay at DESY for eight weeks. Besides the work on a small own project within a certain research group, the students attend a series of lectures which introduce them into the various fields of research activities at DESY. As in the previous years, HASYLAB participated in the summer student program by offering special activities dedicated to students who explicitly state their interest in research with synchrotron radiation.

In 2005 a total of 217 students applied for the DESY summer student program and 79 of these applicants expressed their wish to attend the HASYLAB part of this program. They came from 21 countries and besides physics they were also studying material science, electronics, chemical engineering, chemistry, and biology. Considering the distribution of all applicants among gender it is interesting to note that there is an almost perfect balance with 47% being female students. In contrast to this, the overall applications for the whole DESY program are still dominated by male students with more than 75%. Finally, 20 students (10 male, 10 female) were selected to take part in the HASYLAB program. They came from ten different countries, namely Armenia (1), Austria (2), Italy (1), Germany (5), Poland (2), Russia (3), Slovakia (2), Spain(1), Thailand (2), and Turkey (1).

The program started on July 20 with about one week of common lectures for all DESY summer students covering research at DESY in general, basics of accelerator physics, superconductivity, free electron lasers, particle physics, and research with photons. After this week the HASYLAB summer students had their own program of lectures which took place every Tuesday and Thursday morning with two 90 minutes talks on specific topics of research with synchrotron radiation. These talks first covered basics like production and properties of synchrotron radiation, beamline optics, and detectors and then addressed the different experimental techniques which are used in science with photons at HASYLAB. All the talks were presented by experts in the corresponding fields. One morning was reserved for the presentation of the VUV- and X-FEL activities. Additionally, each Friday morning there was a lecture of common interest for all DESY summer students. These lectures included talks about solid state detectors for particle physics and photon science, astroparticle physics, neutrino physics, and finally a morning organized by EMBL with a couple of talks about synchrotron radiation and life science.

The 20 HASYLAB summer students were distributed among 12 research groups at HASYLAB, EMBL, and MPG where they worked on small individual projects within the corresponding group and experienced the day-to-day work within science. The work of most of the students also involved practical experiments at HASYLAB beamlines. To ensure hands-on exercises for all students, one week was scheduled for practical work at seven instruments, namely at beamline E4 (X-ray absorption spectroscopy), D4 (surface diffraction), BW4 and A2 (small angle X-ray scattering), G3 (powder X-ray diffraction), and F1 and B2 (X-ray crystallography). The students worked in small groups at the experiments, including beamline setup, measurements, data evaluation, and finally the presentation of measurements and results in short talks within a seminar attended by all students at the end of the exercise week.

The summer student program 2005 ended on September 12, traditionally with a common student session for all participants. This concluding event lasted the whole day and the first part was held in a symposium style, where selected students reported on their work during the stay in 15 minutes talks including a short discussion. 15 work reports were presented during this session, five of these presentations were made by HASYLAB summer students. The remaining time of the student session was used to present and discuss the results of an anonymous questionnaire which was previously filled in by all students. It addressed various questions concerning the organization of the summer student program, from housing to the quality and number of lectures. The resonance to the program was again very positive. The students appreciated the excellent atmosphere and the large engagement of the people at DESY to make their stay in Hamburg a great experience. The students appreciated the lectures which comprised topics that are not presented as extensively in ordinary university courses. The HASYLAB summer students especially pointed out that the exercise week was a very positive experience for them. Many of them stated that for their future plans they would take into consideration to work in the field of synchrotron radiation.



HASYLAB Summer Students 2005