
Curriculum Vitae — Håkan Johansson

Name: Håkan Torbjörn Johansson
Born: Halmstad, 1977
Work address: Fundamental Physics
Chalmers University of Technology
412 96 Göteborg, Sweden
Phone: +46 31-772 32 53
e-mail: f96hajo@chalmers.se
WWW: <http://fy.chalmers.se/~f96hajo>



Employment

- Jan. 2010–, Chalmers University of Technology, Gothenburg**
Research engineer. Subatomic Physics group, Fundamental Physics.
- Feb. 2007–Dec. 2009, Chalmers University of Technology, Gothenburg**
PhD studies in experimental physics.
- Feb. 2003–Jan. 2007, Gesellschaft für Schwerionenforschung, Darmstadt, Germany**
Wissenschaftlicher hilfe - research and development as PhD studies.
- Jun.–Sep. 2001, CERN, Geneva, Switzerland.**
Summer student, mounting and testing of ATLAS EM calorimeter.
- 1999, IVF, Mölndal**
Part time trainee work. Development of solar cells.

Education & Examinations

- 2011, Chalmers, Göteborg**
PhD with thesis “Hunting Tools Beyond the Driplines”,
defended 2010-02-10, supervisors T. Nilsson and H. Simon.
- 2007, Chalmers, Göteborg**
LicEng. with thesis “The DAQ always runs”,
supervisors H. Simon and T. Nilsson.
- 1996–2002, Chalmers, Göteborg**
Master of Science in Engineering Physics (Civilingenjör Teknisk Fysik),
with diploma work “Tuning Intel x86 Executables”, supervisor H. Sundell.
- 1998–1999, 12. HkpDiv, Säve**
Military service, weather observer.
- 1993–1996, Kattegattgymnasiet, Halmstad**
Upper secondary school. Science.

Languages

Swedish (native), fluent in English and proficient in German.

Miscellaneous

- 2000** Third prize in Chalmers Medialabs competition in real-time graphics for the program QuantumMolecule.
- 1996** Second prize in the Final of Fysiktävlingen in Stockholm,
participated in the 27th International Physics Olympiad in Oslo.

Computing

C/C++	Deep knowledge (20 years experience).
make	Advanced.
lex/yacc	Proficient. (Using flex/bison.)
VHDL	Proficient.
perl/python	Working knowledge.
cvs/git	Working knowledge.
UNIX	Experienced, system administration (mostly GNU/Linux, also *BSD).

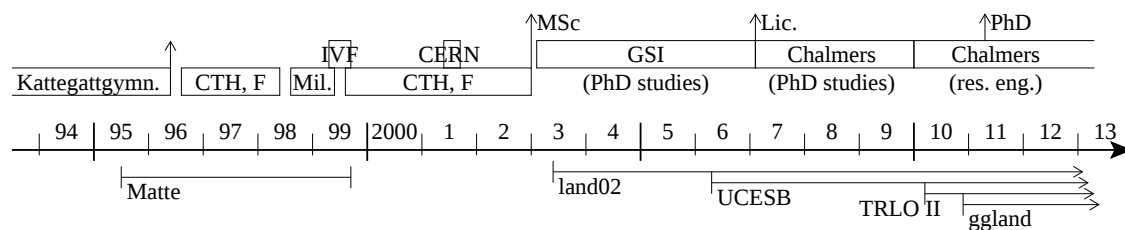
Program development

ggland	2010 –	Command-line simulation wrapper. http://fy.chalmers.se/~f96hajo/ggland
TRLO II	2010 –	Flexible FPGA-based trigger control. http://fy.chalmers.se/~f96hajo/trloii
gpsd	2009 –	Stray involvement in the FOSS project, OnCore receiver handling.
UCESB	2006 –	Unpacking of event-based experimental data. http://fy.chalmers.se/~f96hajo/ucesb
cabling	2004 –	Keep track of the cables and modules in an experimental setup.
Bochs	2004 – 2007	Involvement in the free/open-source project, work on dynamic translation.
land02	2003 –	Calibration and reconstruction tool for the LAND setup (Large Area Neutron Detector) at GSI.
Matte	1995 – 1999	Graph plotting, numerical integration, symbolic differentiation.

Teaching / supervision

- 2004–** Spearheading software developments useful for more than ten PhD thesis projects, and several PostDoc projects. Often also as “last resort” technical trouble-shooter.
- 2008–** Involvement as (technical) advisor in 9 Master Thesis projects (11 Students), of which 5 projects as main/co-supervisor.
- 2007–** Advisor in 7 Bachelor Thesis projects (33 Students), 4 projects as main/co-supervisor.

Timeline



Research activities

I am involved in various nuclear physics experiments at European laboratories, primarily GSI, but also CERN-ISOLDE and KVI. My main scientific interest lies in the efficient use of computers in all aspects of experiment preparations, execution and analysis, as well as high-performance computations for theory:

- I have since several years developed, maintained and overseen the ongoing expansion of new analysis tools for the LAND (future R³B) setup at GSI.
- Adapted and enhanced several data acquisition systems’ software, aiming for both ease-of-use and rock-solid stability, while optimising the performance to the limits of the hardware.

- De-facto in charge of the LAND-setup trigger system, in particular with the development and maintenance of a flexible FPGA-based trigger control.
- Optimisation of computational kernels for NCSM calculations, driving efficient use of high-performance computing resources.
- Involvement in the definition of future detector electronics for the FAIR-NuSTAR experiments, development of associated software.

Selected peer-reviewed articles

- [1] **The $^8\text{Li} + ^2\text{H}$ reaction studied in inverse kinematics at 3.15 MeV/nucleon using the REX-ISOLDE post-accelerator.**
E. Tengborn, A. M. Moro, T. Nilsson, M. Alcorta, M. J. G. Borge, J. Cederkaell, C. Diget, L. M. Fraile, H. O. U. Fynbo, J. Gomez-Camacho, H. B. Jeppesen, H. T. Johansson, B. Jonson, O. S. Kirsebom, H. H. Knudsen, M. Madurga, G. Nyman, A. Richter, K. Riisager, G. Schrieder, O. Tengblad, N. Timofeyuk, M. Turrion, D. Voulot, and F. Wenander.
Phys. Rev. C, **84**(6), 2011.
- [2] **Three-body correlations in the decay of He-10 and Li-13.**
H. T. Johansson, Yu. Aksyutina, T. Aumann, K. Boretzky, M. J. G. Borge, A. Chatillon, L. V. Chulkov, D. Cortina-Gil, U. Datta Pramanik, H. Emling, C. Forssen, H. O. U. Fynbo, H. Geissel, G. Ickert, B. Jonson, R. Kulesa, C. Langer, M. Lantz, T. LeBleis, K. Mahata, M. Meister, G. Muenzenberg, T. Nilsson, G. Nyman, R. Palit, S. Paschalis, W. Prokopowicz, R. Reifarh, A. Richter, K. Riisager, G. Schrieder, N. B. Shulgina, H. Simon, K. Suemmerer, O. Tengblad, H. Weick, and M. V. Zhukov.
Nucl. Phys. A, **847**(1-2):66–88, 2010.
- [3] **The unbound isotopes He-9, He-10.**
H. T. Johansson, Yu. Aksyutina, T. Aumann, K. Boretzky, M. J. G. Borge, A. Chatillon, L. V. Chulkov, D. Cortina-Gil, U. Datta Pramanik, H. Emling, C. Forssen, H. O. U. Fynbo, H. Geissel, G. Ickert, B. Jonson, R. Kulesa, C. Langer, M. Lantz, T. LeBleis, K. Mahata, M. Meister, G. Muenzenberg, T. Nilsson, G. Nyman, R. Palit, S. Paschalis, W. Prokopowicz, R. Reifarh, A. Richter, K. Riisager, G. Schrieder, H. Simon, K. Suemmerer, O. Tengblad, H. Weick, and M. V. Zhukov.
Nucl. Phys. A, **842**:15–32, 2010.
- [4] **Proton in-beam tests of the Lund R3B calorimeter prototype.**
D. D. DiJulio, V. Avdeichikov, J. Cederkall, P. Golubev, B. Jakobsson, H. Johansson, and C. Tintori.
Nucl. Instrum. Methods Phys. Res. Sect. A, **612**(1):127–132, 2009.
- [5] **Position reconstruction in large-area scintillating fibre detectors.**
K. Mahata, H. T. Johansson, S. Paschalis, H. Simon, and T. Aumann.
Nucl. Instrum. Methods Phys. Res. Sect. A, **608**(2):331–335, 2009.
- [6] **Lithium isotopes beyond the drip line.**
Yu. Aksyutina, H. T. Johansson, P. Adrich, F. Aksouh, T. Aumann, K. Boretzky, M. J. G. Borge, A. Chatillon, L. V. Chulkov, D. Cortina-Gil, U. Datta Pramanik, H. Emling, C. Forssen, H. O. U. Fynbo, H. Geissel, M. Hellstroem, G. Ickert, K. L. Jones, B. Jonson, A. Kliemkiewicz, J. V. Kratz, R. Kulesa, M. Lantz, T. LeBleis, A. O. Lindahl, K. Mahata, M. Matos, M. Meister, G. Muenzenberg, T. Nilsson, G. Nyman, R. Palit, M. Pantea, S. Paschalis, W. Prokopowicz, R. Reifarh, A. Richter, K. Riisager, G. Schrieder, H. Simon, K. Suemmerer, O. Tengblad, W. Walus, H. Weick, and M. V. Zhukov.
Phys. Lett. B, **666**(5):430–434, 2008.

Co-author on another 17 peer-reviewed articles since 2003.

Other Publications

The DAQ always runs

H.T. Johansson

Lic. thesis, Chalmers University of Technology, Göteborg, 2006.

Hunting Tools Beyond the Driplines

H.T. Johansson

Ph.D. thesis, Chalmers University of Technology, Göteborg, 2010.

The UCESB unpacker generator, Long write-up - documentation and manual

H.T. Johansson

Published together with “Hunting Tools Beyond the Driplines”.