

Brent Fokke Bram Huisman

Personal Information

Date of Birth February 1, 1987
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Publications

Journal Articles in preparation

- 2017 **Brent F. B. Huisman, É. Testa and D. Sarrut**, *Performance of Prompt Gamma fall-off detection in clinical simulations*.

Spot-by-spot PG monitoring appears to be unrealistic given the required statistics for a measurement with millimetric precision and the available statistics in clinical treatment plans. Grouping spots is found to enable clinical use of these PG cameras if the sum of the spot weights is at least 10^9 proton primaries.

Journal Articles

- 2016 **Brent F. B. Huisman, J. M. Létang, É. Testa and D. Sarrut**, *Accelerated Prompt Gamma estimation for clinical Proton Therapy simulations*, *Phys. Med. Biol.*, published Oct 14.

A variance reduction method for the simulation of Prompt Gammas in clinical proton therapy is demonstrated and validated. A speedup factor of about 10^3 is achieved for a clinical treatment plan and CT image.

Talks & Posters

- 2016 *Performance of Prompt Gamma fall-off detection in clinical simulations*
Poster at **PTCOG**, Tokyo, Japan, May 8-13.
- 2016 *Accelerated Prompt Gamma estimation for clinical Proton Therapy simulations*
Poster at **PTCOG**, talk at **Gate Workshop**, Prague, Czech Republic, May 22-28.
- 2016 *Accelerated Prompt Gamma estimation for clinical Proton Therapy simulations*
Talk at **OpenGate Meeting**, Orsay, France, March 31.
- 2016 *Accelerated Prompt Gamma estimation for clinical Proton Therapy simulations*
Winning poster & talk at **ICTR-PHE**, Geneva, Switzerland, Feb 15-19.

Work experience

- 2017–present **Postdoc**, *Nederlands Kanker Instituut, Amsterdam, The Netherlands*.
- Using portal imagers for dose reconstruction during X-ray treatments.
- Supervised by Dr. A. Mans.
- 2013–2017 **PhD Thesis**, *Creatis, IPNL, L'Université de Lyon, Lyon, France*.
- Treatment Control in Proton Therapy using Prompt Radiation Imaging.
- View or download description at brenthuisman.net/phd.
- Supervised by Dr. D. Sarrut and Dr. E. Testa.

Grants and Awards

- 2016 **6 Month Individual Grant**, *Fondation ARC, Villejuif, France*.

Education

- 2011–2012 **Master Thesis in Physics, track Particle and Astroparticle Physics**, *Nikhef, Universiteit van Amsterdam, Amsterdam, The Netherlands*.
- Study and construction of a Proton-CT device.
 - View or download at brenthuisman.net/msc.
 - Supervised by Dr. J. Visser and Prof. Dr. S. Brandenburg.
- 2010 **Bachelor Thesis in Liberal Arts and Sciences, major Physics**, *WZI, Universiteit van Amsterdam, Amsterdam, The Netherlands*.
- Studied Photoluminescence of Silicon Nanocrystals.
 - Supervised by D. Timmerman and Prof. Dr. hab. T. Gregorkiewicz.

Experience

Research courses

- 2016 **IN2P3 School Of Statistics**, *CNRS, IN2P3*.
- The IN2P3 School Of Statistics gives an overview of the concepts and tools used in particle physics, astro-particle physics and cosmology when probabilities and statistics come to play.
 - Autrans, France, May 30-Jun 3.
- 2012 **Graduate Research Course**, *Vrije Universiteit*.
- Wrote essay "Mathematical Models in World Finance" for the course on "Science and Society: A Historical Perspective".
 - Supervised by Dr. D.J. Beckers and Dr. D.M. Baneke.
- 2011 **Cern Summer School**, *Cern, Nikhef*.
- Developed TPC Slow Control monitoring panel for ATLAS control room.
 - Supervised by Dr. S. Zimmermann and Dr. G.J. Bobbink.
- 2011 **Graduate Research Course**, *Universiteit van Amsterdam, Nikhef*.
- Studied and built an Atmospheric Muon Detector.
 - Supervised by Prof. Dr. P.M. Kooijman.
- 2007–2008 **Undergraduate Research Course**, *Universiteit van Amsterdam, Vrije Universiteit*.
- Studied the feasibility of the hydrogen car, from technical and sociological perspectives.
 - Supervised by Prof. Dr. R.P. Griessen.

Teaching

- 2015 **Graduate Teaching Assistant**, *L'Université de Lyon*.
- Practical course on non-destructive measurements with X-rays.
- 2013 **Undergraduate Teaching Assistant**, *Universiteit van Amsterdam*.
- Physics BSc., first year course "Electromagnetism".
- 2008–2011 **Undergraduate Teaching Assistant**, *Universiteit van Amsterdam*.
- Liberal Arts BSc., first year course "Introduction to Physics".
- 2009 **Mentor Bèta 1op1**, *Universiteit van Amsterdam*.
- Project to motivate high school students for the exact sciences. My main contribution was organizing a trip to Cern, Geneva.
- 2009 **Pabo DuoStage**, *Universiteit van Amsterdam, Hogeschool van Amsterdam*.
- An exact sciences student and a student of education are paired to develop science-education for primary schools.

Extracurricular Activities

- 2010–2013 **Member of Treasury Audit Committee**, *Study Association for Exact Sciences Amsterdam*.
- 2011–2013 **Member of Advisory Committee**, *Uvasociaal (Student Party)*.
- 2011–2012 **Member of the Sustainability Advisory Committee**, *Faculty of Science Student Council*.
- 2009–2010 **Member of the Tender Committee for Procurement of Desktop IT Equipment**, *Universiteit van Amsterdam*.
- 2010 **Secretary of the Consultancy Event**, *Study Association for Exact Sciences Amsterdam*.
- 2009–2010 **Member of the Faculty of Science Student Council**, *Universiteit van Amsterdam*.
- 2009–2010 **Treasurer of the Study Association for Exact Sciences Amsterdam**.

Work

- 2012–2013 **Software Developer**, *Academic Medical Center Amsterdam*.
A 3 month internship resulting in a tool that converts clinical treatment plans between different accelerators. The tool has been put to clinical use.