

# Hugo Day

---

PERSONAL DETAILS	Nationality: British Full UK Driver's License	
CONTACT INFORMATION	CERN Bt. 9-1-002 CH-1211, Geneve 23, Switzerland	office: +61 7 3735 3754 mobile: +44 7890 945140 e-mail: hugoaday@gmail.com
RESEARCH INTERESTS	Beam Dynamics, Wakefields and beam impedance, RF engineering, beam instrumentation, complex systems, numerical methods, nanotechnology, solid state physics	
EDUCATION	<b>University of Manchester</b> , Manchester, United Kingdom	
	<i>Doctor of Philosophy</i>	<b>September 2009 – present</b>
	<ul style="list-style-type: none"><li>• Thesis title: “Measurements and Simulations of Impedance Reduction Techniques in Particle Accelerators” - Work done under placement at CERN (February 2010 – February 2013) through the CERN Doctoral Program</li><li>• Expected graduation date: February 2013</li><li>• Supervisors: Professor Roger Jones and Dr Elias Metral (CERN)</li><li>• I used theoretical models, commercial EM modelling software (CST Microwave Studio and Ansoft HFSS) and bench top RF measurements to evaluate and characterise the EM properties of accelerator components, predominantly fast transmission line kickers, in the auspices of beam coupling impedance and heating due to high current beam interactions. Working in an internationally diverse team, results were regularly presented internally for review and feedback, with communication between operational and design teams to integrate the RF results into their design revisions. During the course of this thesis a new RF measuring technique for evaluating asymmetric structures was proposed and verified with simulations and measurements, and the power loss in ferrite damped cavities in the case of weak to moderate damping investigated in detail.</li></ul>	
	<b>University of Southampton</b> , Southampton, United Kingdom <i>MPhys (Hons) Physics Classification: 1<sup>st</sup> Class</i>	<b>October 2005 – July 2009</b>
	<ul style="list-style-type: none"><li>• Masters' Thesis: “Controlling the synthesis of branched gold nanoparticles using a wet chemical synthesis method” under the supervision of Dr. Antonios Kanaras</li><li>• Supervisor: Dr Malcolm Coe</li></ul>	
PROFESSIONAL EXPERIENCE	<b>CERN</b> , Geneve, United Kingdom	
	<i>CERN Tour Guide/Conferencier</i>	<b>November 2010 – Present</b>
	Giving introductory presentations and tours of experimental facilities at CERN to visitors, both public and private of all ages and knowledge.	
	<b>University of Manchester</b> , Manchester, United Kingdom	
	<i>Teaching Assistant</i>	<b>September 2010 – January 2011</b>
	Teaching assistant for undergraduate courses (Programming in C).	
	<b>CERN</b> , Geneve, United Kingdom	
	<i>CERN Summer Student</i>	<b>June 2008 – September 2008</b>
	Simulations of the $H^-$ and electrons through the spectrometer in the 3MeV test stand for LINAC4. The magnetic field of the spectrometer was first realised, and then the trajectory of the particles simulated using the tracking code PATH.	
PEER-REVIEWED PUBLICATIONS	Day, H.A., Bartczak, D., Fairbairn, N., McGuire, E., Ardakan, M., Porter, A. E. and Kanaras, A.G., “Controlling the three-dimensional morphology of nanocrystals”, <i>CrystEngComm</i> , 2010, 12, 4312-4316.	
CONFERENCE PUBLICATIONS	Day, H.A., Barnes, M., Caspers, F., Jones, R.M., Metral, E., Salvant, B. “Evaluation of the Beam Coupling Impedance of New Beam Screen Designs for the LHC Injection Kicker Magnets”, WEPPR071, IPAC'12, New Orleans, US, 2012.	
	Day, H.A., Caspers, F., Dallochio, A., Gentini, L., Grudiev, A., Jones, R.M., Metral, E., Salvant, B. “Beam Coupling Impedance of the LHC TCTP Collimators”, WEPPR070, IPAC'12, New Orleans, US, 2012.	

Day, H.A., Caspers, F., Jones, R.M., Metral, E. “Simulations of Coaxial Wire Measurements of the Impedance of Asymmetric Structures. ”, MOPS079, IPAC’11, San Sebastian, Spain, 2011.

Day, H.A., Barnes, M., Caspers, F., Jones, R.M., Metral, E., Salvant, B., C. Zannini “Coaxial Wire Measurements of Ferrite Kicker Magnets”, MOPS078, IPAC’11, San Sebastian, Spain, 2011.

Day, H.A., Caspers, F., Jones, R.M., Metral, E., Salvant, B. “Comparison of the current LHC Collimators and the SLAC Phase 2 Collimator Impedances”, MOPS080, IPAC’11, San Sebastian, Spain, 2011.

INVITED TALKS      Day, H.A., Biancacci, N., Salvant, B. Zannini, C. “Impedance simulations of the LHC collimators and low beta simulations of ferrite kicker magnets with CST Particle Studio”, 6th CST European User Group Meeting, Freising, Germany, 2011.

LANGUAGES            English (Fluent), French (Intermediate), German (Beginner)

PROGRAMMING        C, C++, Matlab, Mathematica, Python, Java, L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, R, \*nix and Windows administration

PROGRAMMING        Climbing, mountaineering, hiking, running, cycling, reading, language learning, amateur film production, martial arts, electronics, home automation, cooking

REFEREES            **Dr. Elias Metral**  
CERN  
Geneve 23, Switzerland, CH-1211  
  
phone: *available on request*  
e-mail: *elias.metral@cern.ch*

**Dr Roger Jones**  
University of Manchester  
Oxford Road, Manchester, United  
Kingdom, M13 9PL  
phone: *available on request*  
e-mail: *roger.jones@stfc.ac.uk*

**Dr Fritz Caspers**  
CERN  
Geneve 23, Switzerland, CH-1211  
phone: *available on request*  
e-mail: *fritz.caspers@cern.ch*