



John Adams Institute for Accelerator Science Lecture Series

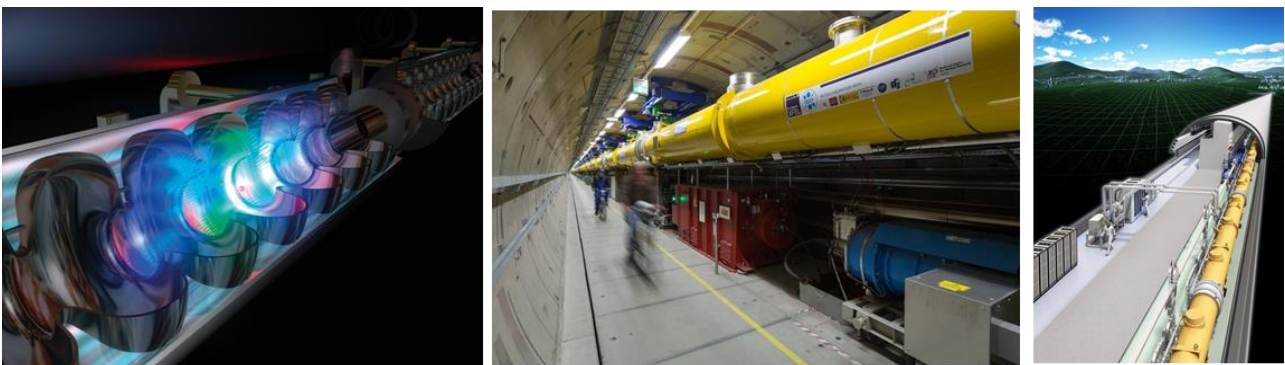
Monday 13th March 2017 at 11:15 am
Dennis Sciama Lecture Theatre, Denys Wilkinson Building

From Linear Collider to European XFEL, and back again

**Nick Walker,
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Abstract:

In the early nineties DESY and its collaborators began development of cost-effective superconducting radio-frequency technology as part of a proposal for a 500 GeV centre-of-mass electron-positron linear collider (TESLA). From 2004, DESY together with its predominantly European partners has further developed and industrialised this technology specifically for the European XFEL. Construction of the XFEL was successfully completed at the end of 2016 and it is now undergoing commissioning. With 100 cryomodules comprising a total of 800 1.3-GHz superconducting microwave cavities, the XFEL is the largest deployment of the so-called TESLA technology to date. In parallel the International Linear Collider (ILC) has been further developed as an international project, first by the Global Design Effort (GDE) and more recently by the Linear Collider Collaboration (LCC). The performance of the XFEL cavities and cryomodules have achieved the original ILC specifications, and much has been learnt from XFEL for the ILC. In this talk I will cover the historical development of the TESLA technology, the challenges of the linear collider, the achieved performance of the XFEL, and finally a view ahead to a possible ILC hosted by Japan.



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