SUMMER STUDENT LECTURE PROGRAMME 2018

Lecture Title	Flavour Physics
Lecturer's name	Mark Williams
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Short CV	I am an experimental particle physicist mainly working in the field of flavour physics, and specifically interested in matter-antimatter oscillation and asymmetries of particles containing heavy (beauty and charm) quarks. I currently work on the LHCb experiment (2014-) and the forthcoming Mu2e experiment (2017-). Previously I was a member of the DZero collaboration based at Fermilab. I also have an interest in developing silicon sensor technologies for use in future particle detectors and in other fields (e.g. including precise timing information to capture super-fast processes).
Lecture Content	Following the earlier lectures on the standard model from C. Grojean, this course will concentrate on some experimental aspects of flavour physics, with a focus on 'CP violation' (i.e. matter-antimatter asymmetry). I'll discuss the historical development of the fields, the current experimental status, and future prospects.
Pre-requisites: earlier series of lectures that the students should follow	This course assumes knowledge of "The Standard Model" (Grojean). I recommend that you attend other courses, but they are not formally required.
Other pre-requisites:	No formal requirements. An excellent (but too detailed for this course) book is "Discrete Symmetries and CP violation" (Marco Sozzi, OUP 2008)