

**SCHOOL OF PHYSICS**

**UNIVERSITY OF NEW SOUTH WALES**



# COLLOQUIUM

*3-4 p.m., Wednesday, 10 February, 2010*

**PLEASE NOTE CHANGE OF TIME AND DAY**

School of Physics Common Room Room 64, Old Main Building

**Dr Christoph Hanhart**

**Forschungszentrum Jülich, Germany**

## **“Charm quarks and the Mysteries of the Strong Interaction”**

One of the central issues of basic research is to try to understand the structure of the universe, and thus the conditions of our existence, from first principles. Although our understanding of the fundamental interactions --- collected in the Standard Model (SM) of particle physics --- has improved tremendously in recent years, even today the origin of the apparent matter--antimatter asymmetry in the Universe is unknown. It is natural to expect that missing pieces of the SM, or even signals of an even more fundamental theory, can be found in strongly interacting systems at low energies, as such systems are still poorly understood by the standards of particle physics. Thus, a central goal of current research is to better understand the strong interaction. As well as hunting for sources of matter-antimatter asymmetry, this includes attempts to understand how the structure of matter emerges from first principles.

This talk reviews recent advances and addresses current issues in the strongly interacting sector of particle physics. Special emphasis will be put on what to expect from future experiments, with a focus on particles with charmed quarks.

The audience is invited to meet the speaker beforehand at 2.45 p.m. over coffee and biscuits in the Common Room.

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