**Physics Seminar**

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  "*Neutrons and the Early Universe – Highlights and Challenges of a Relationship*"

**Abstract:**

*The history of the early universe offers several key puzzles, which are presently addressed by
particle physics. They include the the matter/antimatter asymmetry, the left-handedness of the
Universe and primordial nucleosynthesis. All these questions are directly related to discrete
symmetries and their violation.  When using accelerators, the sensitivity for their exploration
is directly connected to the maximum beam energy.  Neutrons offer a complementary approach and the sensitivity is only given by the experimental precision achievable. In addition the search
for new phenomena becomes less model dependent.  Since about a decade, particle physics with neutrons is also used to address gravity and gravity-like forces with unprecedented precision.  This maybe one of the very few ways, how to address issues relevant to the very early Universe.  The talk will give an overview on the physics and the experimental approaches and will also highlight some of the challenges which are met.*

**Friday, November 21, 2014**

**11:00 am**

**CEBAF Auditorium**