



TECHNISCHE
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INSTITUT FÜR
ANGEWANDTE PHYSIK
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IAP-SEMINAR

EINLADUNG

Termin: **Dienstag, 4.10.2011 um 16:00 Uhr**
Ort: **Technische Universität Wien,
Institut für Angewandte Physik,
Seminarraum 134A, Turm B (gelbe Leitfarbe), 5. OG
1040 Wien, Wiedner Hauptstraße 8-10**

Vortragender: **Dr. Martin Simon**
TRIUMF, TITAN
Canada's National Laboratory for Particle and Nuclear Physics,
Vancouver/Canada

Thema: **Fast Charge Breeding of short-lived Isotopes in an Electron Beam
Ion Trap for Precision Mass Measurements at TRIUMF**

Kurzfassung

At Canada's National Laboratory for Particle and Nuclear Physics (TRIUMF), the TITAN facility (TRIUMF's Ion Traps for Atomic and Nuclear science) is dedicated to high precision experiments on rare isotopes with a focus on mass measurements in a Penning trap [1].

Isotopes of special interest are often located close to the proton or neutron drip line where short life times (tens of milliseconds) and low production rates make it challenging to achieve the required precision. Breeding the ions to higher charge states (q) leads to a boost in precision of the mass measurement by a factor of q provided that the processes of injection, breeding, and extraction are fast and efficient. These two conditions are well met by electron beam ion traps (EBITs).

For instance, the masses of neutron deficient $^{74}\text{Rb}^{8+}$ and neutron rich $^{98}\text{Rb}^{15+}$ with life times of 65ms and 114ms, respectively, have been successfully measured. Recently more efficient breeding procedures based on accumulation of ions in a charge state which corresponds to an atomic shell closure have been applied.

*Alle interessierten Kolleginnen und Kollegen sind zu diesem Seminar
(45 min mit anschließender gemeinsamer Diskussion) herzlich eingeladen.*

*F. Aumayr e.h.
(Seminar-Chairperson)*

*H. Störi e.h.
(LVA-Leiter)*