

Abstract Submitted
for the DAMOP07 Meeting of
The American Physical Society

Fast-ion-beam laser-induced-fluorescence measurements of oscillator strengths in doubly ionized lanthanides¹ RUOHONG LI, RICHARD A. HOLT, S. DAVID ROSNER, Department of Physics and Astronomy, University of Western Ontario — Accurate oscillator strength data for singly and doubly ionized lanthanides are needed in astrophysics to study the spectra of Chemically Peculiar (CP) stars, which show large overabundances of lanthanides compared to the Standard Abundance Distribution, and for nucleosynthesis studies. We have previously measured oscillator strengths in Sm II, Nd II, and Pr II using fast-ion-beam laser-induced-fluorescence methods. Our new Penning Ion Source provides us doubly-ionized ion beams to study lifetimes and branching fractions of lanthanide ions, which are actually the more abundant charge species in hot CP stars. A new GaAs photomultiplier tube gives us a greater wavelength range (185-930nm) for the detection of spontaneous emission. A new detector-substitution method of detector calibration will make the experimental accuracy significantly below 10%. Recent results will be presented.

¹Supported by the Natural Sciences and Engineering Research Council of Canada

Richard A. Holt
Department of Physics and Astronomy, University of Western Ontario

Date submitted: 02 Feb 2007

Electronic form version 1.4