

Direct detection of argon metastable atoms in a hollow cathode discharge in argon

T.D. Märk, F. Egger and H. Störi

In order to study metastable argon states in the negative glow of a hollow cathode discharge a highly sensitive method has been successfully employed. The discharge is pulsed and the metastable atoms effusing from the negative glow through a floating orifice probe are ionized by electron impact and discriminated against the neutral argon background by a phase sensitive lock in amplifier device. Thus it was possible to monitor the 3P_2 , 3P_0 metastable Argon states as a function of discharge current, gas pressure and electron energy.

Dr. T.D. Märk
Institut für Atomphysik
Universität Innsbruck
A-6020 Innsbruck /Österreich