The resonance region of lithium (58 – 81 eV) was investigated using monochromatized synchrotron radiation and ion time-of-flight (TOF) spectrometry. The photon beam of the PGM undulator beam line passed through the experimental chamber containing vaporized lithium atoms. The lithium ions created were accelerated by a pulsed electric field into the TOF flight tube and detected by a Z-stack of microchannel plates [1].

We have observed the autoionizing resonances to higher principal quantum numbers than in previous experiments [2,3]. Depending on the energy region we have used an energy resolution of 10 meV and 4.5 meV with step sizes as small as 0.5 meV.

Several spectra were taken over short energy intervals as indicated by the different colors of the composed spectrum shown in Fig. 1. All spectra were normalized with respect to the photon flux and background corrected. The fit results along with the data of other authors will be presented for the various Rydberg series on the poster.

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References: