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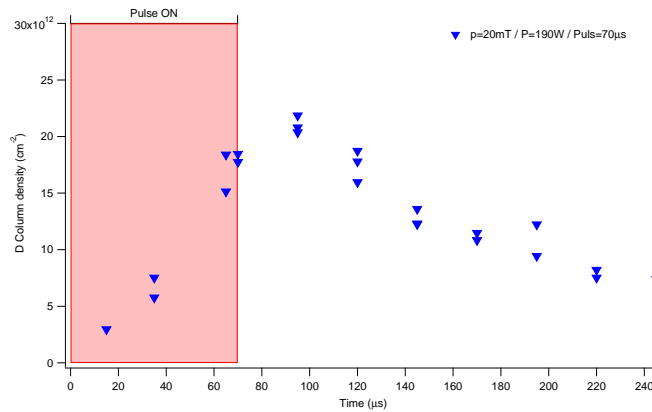
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## TIME RESOLVED MEASUREMENTS OF ATOMIC AND MOLECULAR DEUTERIUM DENSITIES IN A PULSED MW DISCHARGE USING VUV ABSORPTION SPECTROSCOPY

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The VUV-FTS (Vacuum Ultra-Violet Fourier Transform Spectrometer) is in operation on the DESIRS beamline since 2008[1]. This unique endstation combines broad band and high spectral resolution over a large UV-VUV 300 nm - 40 nm spectral range[2]. Recently, a new detection scheme has been installed in order to study formation kinetics and decay of transient species using absorption spectroscopy.

In  $H_2/D_2$  plasmas, recombinative desorption is an effective but complex mechanism for producing ro-vibrationally excited molecules which are of interest to neutralise the highly energetic ions produced in fusion plasma, aiming at decreasing the power load on the divertor targets of tokamaks[3]. The lifetime of the produced transient species inside a pulsed MW discharge has been measured by absorption using the VUV-FTS. This data could bring valuable quantitative information for modeling such complex mechanism.



**Keywords** — combustion and plasma diagnosis, instrumental technique demonstration, small molecules, synchrotron, visible/UV/X-ray, intensities

### References

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