

## Cavity Enhanced Spectroscopy in Support of Molecular Astrophysics

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More than 300 different molecules have been identified in the inter- and circumstellar medium, in large surveys and following dedicated laboratory studies providing precise spectra. Many of the identified species are transients - radicals and ions - and not that easy to produce in a laboratory. However, the use of highly sensitive detection techniques, such as cavity ringdown spectroscopy (CRDS), cavity enhanced spectroscopy (CEAS) or some clever derivatives in combination with state-of-the-art plasma techniques offers the tools to record spectra that can be directly compared with astronomical observations.

In this talk I will present highlights of some 25 years of cavity enhanced spectroscopy in support of astronomy, linking to the secrets of the diffuse interstellar bands and hydrocarbon chemistry in dark interstellar clouds. I will reserve a few minutes to explain how planar plasma expansions can be used in combination with cavity based technology, both cw and pulsed. I will close with introducing CESAS - cavity enhanced self absorption spectroscopy as a more recent development in this research field and with possible applications in daily life.