

# 30 Years of Photodissociation Regions:

A symposium to honor David Hollenbach's lifetime in science  
Asilomar, CA, USA - June 28<sup>th</sup> to July 3<sup>rd</sup>, 2015

## INVITED TALK

### Diffuse clouds as low density PDRs

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The diffuse interstellar medium holds a significant fraction of the total mass of neutral gas in the Milky Way, and as such plays an important role in the interstellar matter life cycle. Due to their relatively low densities, the properties of diffuse clouds are better probed by absorption spectroscopy rather than by emission lines. The advent of the *Herschel* and *Planck* missions, and the *SOFIA* airplane has led to tremendous progresses in the exploration of the diffuse ISM with detections of new species (e.g. Gerin et al. 2012, Neufeld 2015), a systematic exploration of interstellar hydrides (see also Neufeld - 2015), the characterisation of the mean pressure (Gerin et al. 2015), and full sky maps of the dust and CO emission (). Parallel spectacular advances have been obtained in the modeling of these systems using both both three-dimensional MHD simulations and detailed mono-dimensional codes coupling the physics, chemistry and thermodynamics of the gas. This talk will review the recent observational results, and the parallel advances in the modeling.

#### REFERENCES

- Gerin M. et al. (2012) Philosophical Transactions of the Royal Society, 370, 5174  
Gerin M. et al. (2015) A&A 573, A30  
Neufeld D. (2015) This conference  
Planck collaboration Ade P.A. et al. (2014) A&A 571, A13.