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**Presentation Requested: oral**

**Category: Evolution of the Interstellar Medium and Star formation over Cosmic Time**

**Question:** Is there a common Schmidt-Kennicutt law at all redshifts and all scales? How is this "law" affected by different measurement limitations or conversion factors from tracer molecules or emission / absorption lines to amounts of gas and SFR?

**Variations in the KS law on galactic scales- Highlights from PAWS**

Advancing our understanding of the star formation process requires good knowledge of the molecular gas properties within galaxies and their dependencies on galaxy properties. There is now mounting evidence that the organization of molecular gas on scales of Giant Molecular Clouds shows a strong dependence on galactic environment with clear implications for the resulting star formation efficiency. In this presentation, we will highlight recent results from the PdBI Arcsecond Whirlpool Survey (PAWS) including strong variations of molecular gas (clouds) structure and star formation efficiency with galactic environment, evidence for extra-planar molecular gas, estimates for cloud lifetimes. These results will be presented in the context of current sub-grid models for star formation.