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Correlation between nanoparticles formation and plasma parameters evolution in magnetically confined C₂H₂/Ar plasma GEORGES AL MAKDESSI, JOELLE MARGOT, University of Montreal, RICHARD CLERGIEREAUX, University of Paul Sabatier — Dusty plasmas are plasmas containing charged nano-sized or even charged micro-sized particles. Known for decades, dusty plasmas have attracted the interest of the scientific community in the early 80s, especially in astrophysics when dusty particles were discovered in the rings of Saturn [1]. Comets and planetary rings are some examples of natural objects formed by dusty plasmas [2]. Dusty particles are also found in laboratories plasmas such as those used for deposition and etching of thin films. In this presentation, we investigate magnetically confined low pressure dusty plasmas in acetylene. The plasma is created by an electromagnetic surface wave at a frequency of 200 MHz. By performing a parametric study of the influence of the magnetic field on the formation of dust particles and on the plasma properties, we expect to achieve a good understanding of their creation mechanisms, and, ultimately to control their characteristics.

- [1] B.A. Smith et al. Science 215 (4532), 504 (1982)
- [2] C.K. Goeretz, Rev. Geophys. 27, 271 (1989)

Georges Al Makdessi
University of Montreal

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