Abstract Submitted
for the GEC17 Meeting of
The American Physical Society

Linking experimental measurements and numerical simulations to understand plasma-surface interaction processes[1] A. R. GIBSON, M. BLAKE, J. BREDIN, K. NIEMI, A. GREB, University of York, UK, B. BRUNEAU, E. JOHNSON, LPICM-CNRS, France, A. DERZSI, Z. DONKO, Wigner Research Centre, Hungary, J.-P. BOOTH, LPP-CNRS, France, D. O'CONNELL, T. GANS, University of York, UK — Surfaces play a key role in defining the properties of low-pressure plasma sources through the destruction of reactive neutral species. However, despite their importance, fundamental data concerning particle-surface interactions in plasmas are often poorly known as a result of difficulties in experimentally measuring surface interaction probabilities in active plasmas. Combining experiments and numerical simulations offers a promising route overcome the associated challenges and better understand surface interaction processes. In this work, phase resolved optical emission spectroscopy (PROES) and energy resolved acinometry (ERA) are used in combination with numerical simulations (one-dimensional PIC and fluid) to gain insight into surface losses of singlet delta oxygen metastables and atomic oxygen in low pressure radio-frequency driven capacitively coupled oxygen plasmas.

[1]Funding through LABEX Plas@Par ANR-11-IDEX- 0004-02 and UK EPSRC (EP/K018388/1) is acknowledged

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Date submitted: 26 Jun 2017 Electronic form version 1.4