Constraining seasonal changes of the Enceladus plume Y. D. Jia[1], C. T. Russell[1], K. K. Khurana[1], and T. I. Gombosi[2], [1]ESS, University of California, Los Angeles, CA 90095, USA, yingdong@ucla.edu. [2] Department of Atmospheric, Oceanic and Space Sciences, University of Michigan, Ann Arbor, MI, 48109, USA.

Introduction: Since 2005, Cassini has been closely monitoring Enceladus and its torus for over a quarter of a Saturn year. Sunlight has moved from above to below the south pole of Enceladus. Vents have been observed to be activate and hibernate by the onboard cameras. How much does the Enceladus plume and its torus change during these seasons? The magnetic field responses to the total gas production and torus momentum are recorded in multiple in situ observations for six years. We have deduced the outgassing rates by comparing calculated and observed plasma and field values using our MHD models but no significant variations are found