Dynamic surface tension measurements of ionic surfactants using maximum bubble pressure tensiometry CAMILLA U. ORTIZ, NOR-MAN MORENO, VIVEK SHARMA, Chemical Engineering, University of Illinois at Chicago — Dynamic surface tension refers to the time dependent variation in surface tension, and is intimately linked with the rate of mass transfer of a surfactant from liquid sub-phase to the interface. The diffusion- or adsorption-limited kinetics of mass transfer to interfaces is said to impact the so-called foamability and the Gibbs-Marangoni elasticity of surfaces. Dynamic surface tension measurements carried out with conventional methods like pendant drop analysis, Wilhelmy plate, etc. are limited in their temporal resolution (>50 ms). In this study, we describe design and application of maximum bubble pressure tensiometry for the measurement of dynamic surface tension effects at extremely short (1-50 ms) timescales. Using experiments and theory, we discuss the overall adsorption kinetics of charged surfactants, paying special attention to the influence of added salt on dynamic surface tension.