

Abstract Submitted
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The seasonal variability of Titan's global wind field¹ SIOBHAN LIGHT, UMD, MARK GURWELL, CfA, CONOR NIXON, ALEXANDER THELEN, NASA GSFC — Spatially resolved observations of the gas acetonitrile (CH₃CN) on Titan lends insight into the dynamics, chemistry and seasonal variation of its stratosphere. In particular, the distribution of the molecule as a function of altitude and latitude are strongly influenced by chemistry and climate, while detailed spectral measurements of the central frequencies of rotational lines reveal zonal wind speed via the Doppler effect. Longer-term seasonal differences in wind speed and distribution remain mostly unconstrained. In this study, interferometric observations of Titan obtained with the extended SMA in 2009 and 2010 were analyzed in order to extend the existing time series of CH₃CN observations on Titan. Initial data analysis found prograde zonal winds of similar magnitude in both years consistent with previous results. New wind speed measurements are found and compared to previous work. These results can be used to improve vertical abundance profiles of this molecule and general atmospheric circulation models of Titan.

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