1475 SPECTRAL STRUCTURE OF 5-YEAR TIME SERIES OF HORIZONTAL WIND SPEED **AT THE BOULDER ATMOSPHERIC OBSERVATORY**

Introduction & Research goal

- A long-term high-frequency time series of wind speed provides an opportunity to explore the spectral characteristics of wind speed fluctuation. In practice, the observed spectral characteristics are used to validate atmospheric modeling.
- We examine the spectral structure of 5-year, 1-min time series of horizontal wind speeds at 100 m and 10 m heights at the Boulder Atmospheric Observatory (BAO) tower.



year during the period.

Year	Period	N_m/N (%)		
		10 m	100 m	10 m
Yr. 1	Mar. 2011-Feb. 2012	2.28	2.96	120.0
Yr. 2	Mar. 2012-Feb. 2013	0.41	1.15	24.1
Yr. 3	Mar. 2013-Feb. 2014	4.85	4.55	290.4
Yr. 4	Mar. 2014-Feb. 2015	0.71	0.60	51.1
Yr. 5	Mar. 2015-Feb. 2016	2.23	2.10	167.1
5-Yr	Mar. 2011-Feb.2016	2.09	2.27	290.4

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 P_m (hr) 100 m 120.0 290.4 39.8 155.9 290.4





$TI \equiv \sigma_{\overline{u}}/\overline{u}$ series. $u \ ({ m m s^{-1}})$

The TI-wind speed relationship with the summer time series more sensitively responds to the choice of the averaging period in the spectral gap region than with the TI-wind speed relationship with the winter time

