National Research University
St. Petersburg State Polytechnical University,
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«Renewable Energy Sources»

IN SITU MEASUREMENTS OF THE WIND FLOW CHARACTERISTICS USING SODAR REMOTE SENSING DEVICE IN THE AREA OF THE FLOOD PREVENTION FACILITY COMPLEX IN THE CITY OF ST. PETERSBURG

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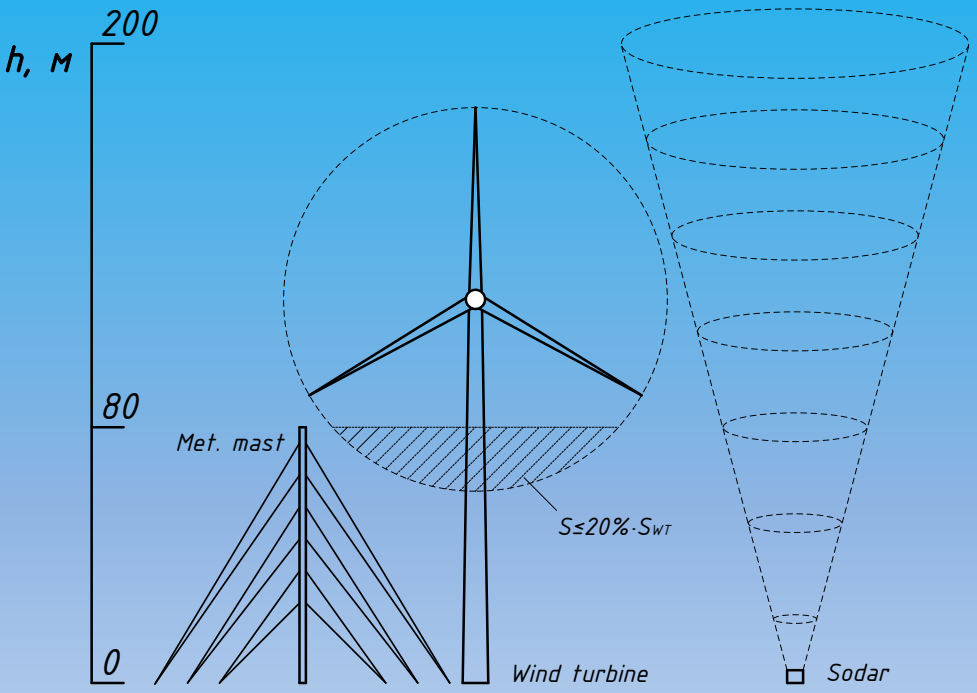
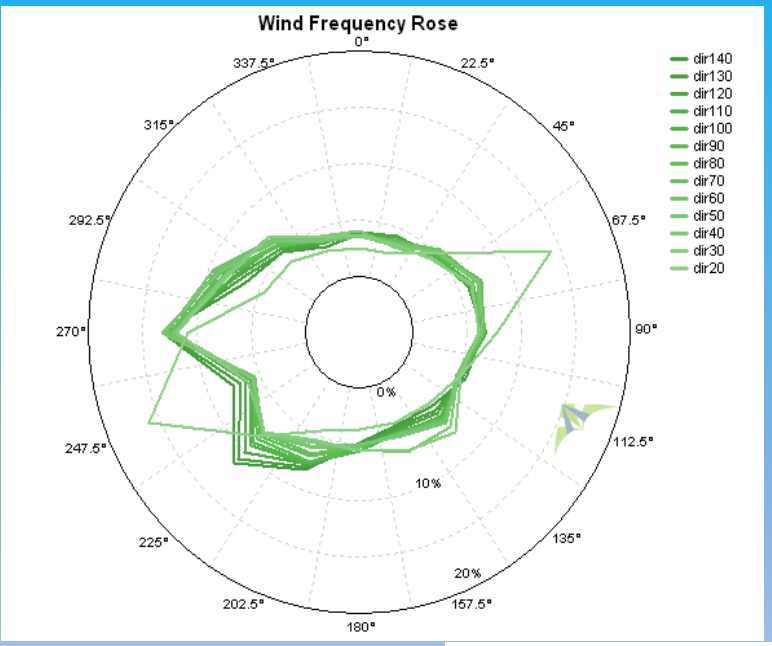
WIND MEASUREMENT COMPARISON

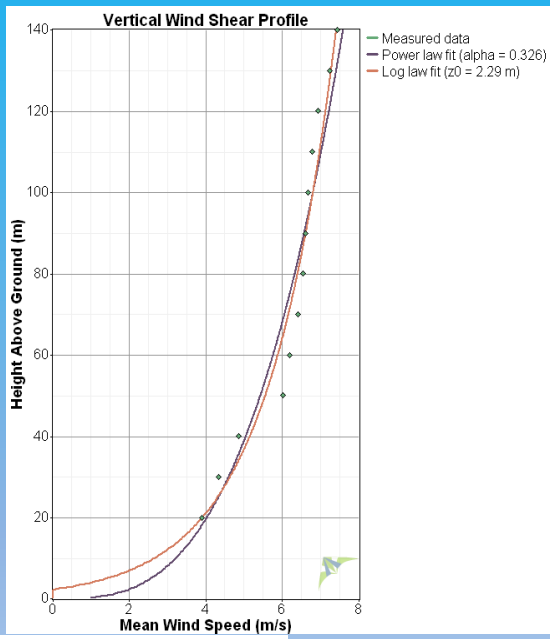


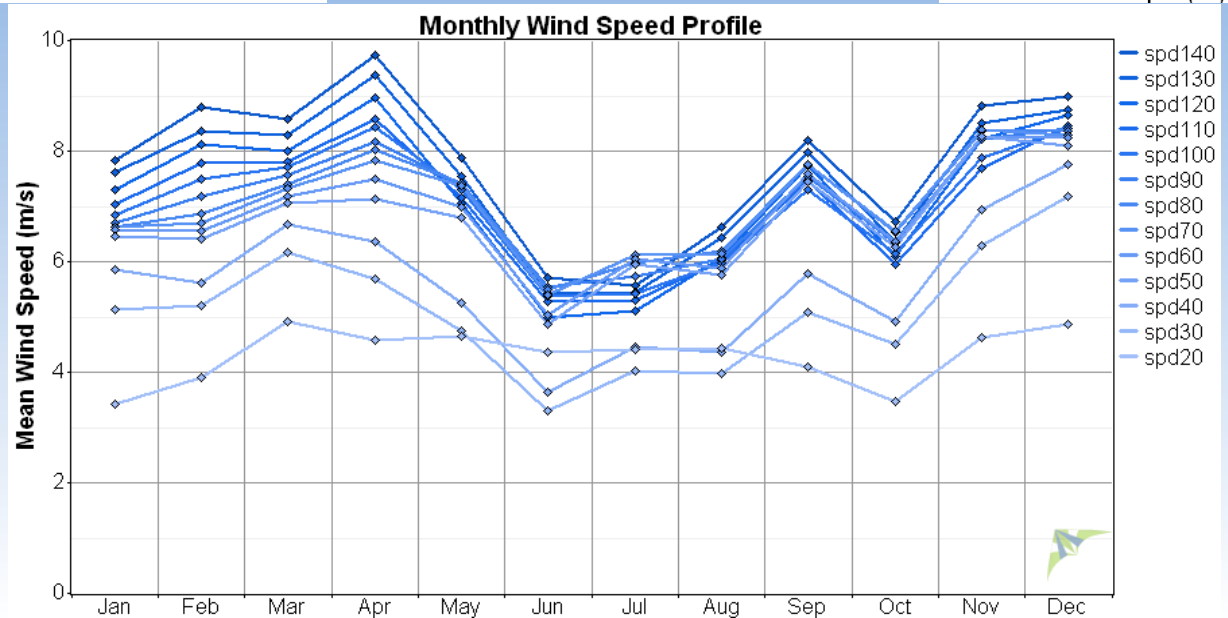
1. Improves the accuracy of the vertical profile of the wind and the development of wind turbines.
2. Reduces costs of wind measurement through the use of lower height meteo mast.
3. Mobility, ease of installation, no need to harmonize meteo mast.

LOCATION OF SITE

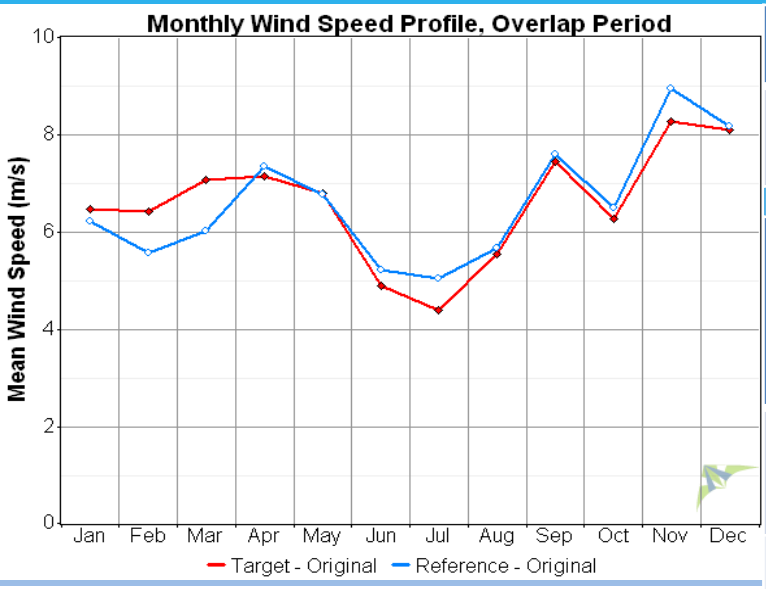
MEASURED RESULTS

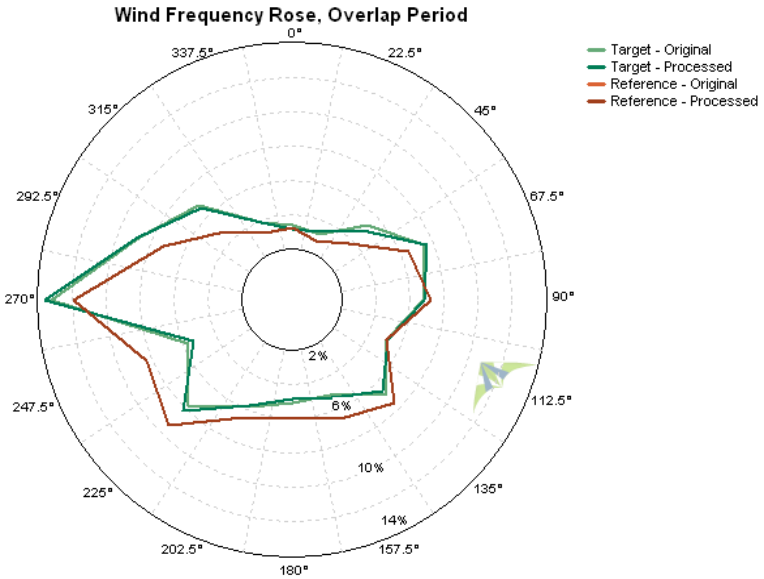






COMPARISON SODAR DATA AND NCEP CFSR DATA





Height, м	Count	R_{speed}	$R_{direction}$
50	6 681	0,675	0,866

Parameter	Height, м	Sodar	Sodar + CFSR synt
Mean wind speed	50	6,59 m/s	7,07 m/s
Min. wind speed	50	0,03 m/s	0,43 m/s
Max. wind speed	50	33,05 m/s	21,91 m/s
k	50	2,180	2,711
A	50	7,42 m/s	7,95 m/s
Wind resources	50	316 W/m^2	323 W/m^2
Wind direction	50	245.1°	234.1°