DAVIDE ASTOLFI

Curriculum Vitae, 21 luglio 2023

CONTATTI

Dipartimento di Ingegneria
Università di Perugia
Perugia, via G. Duranti 93 - IT06125

Ufficio
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TITOLI DI STUDIO

2022	Ph.D. in Ingegneria Industriale e dell'Informazione nel settore ING-IND/33 - Università di Perugia. Supervisor Prof. Francesco Castellani, revisori Prof. Filippo Spertino e Prof. Alfredo Vaccaro.
2013	Tirocinio Formativo Attivo, abilitazione all'insegnamento nella scuola secondaria superiore, classe di concorso A027 (Matematica e Fisica) - Università di Perugia - 96/100
2009	Ph.D. in Fisica - Università di Perugia
2005	Laurea Specialistica in Fisica - Università di Perugia - 110/110 e lode
2003	Laurea Triennale in Fisica - Università di Perugia - 110/110 e lode

POSIZIONE ACCADEMICA

Gennaio 2023–Maggio 2023 **Collaboratore** presso il Dipartimento di Ingegneria, Università di Perugia: "Analisi del trend operazionale e formulazione di indici di performance per la caratterizzazione del comportamento di singole turbine eoliche e/o wind-farm".

Gennaio 2022–Agosto 2022 **Collaboratore** presso il Dipartimento di Ingegneria, Università di Perugia: "Sviluppo di tecniche per l'analisi di performance di operation di impianti eolici e caratterizzazione della vita residua delle turbine e dei principali componenti".

14/12/2020–14/12/2021 **Borsista Post-Lauream** presso il Dipartimento di Ingegneria, Università di Perugia: "Analisi statistica di dati di operation di turbine eoliche per diagnosi preventiva di guasti".

01/02/2020–01/07/2020 **Borsista Post-Lauream** presso il Dipartimento di Ingegneria, Università di Perugia: "Analisi di performance di turbine eoliche e valutazione di upgrade ed estensioni del ciclo di vita"

15/12/2015–01/09/2019 **Assegnista di Ricerca** presso il Dipartimento di Ingegneria, Università di Perugia: "Sviluppo di tecniche di analisi di dati SCADA e di vibrazione per diagnosi preventiva di guasti e ottimizzazione di performance di parchi eolici".

01/12/2014–30/11/2015 **Assegnista di Ricerca**. Vincitore della call pubblica per assegni di ricerca "Tipologia A: Regime speciale "Scheda Università" Proposta Progettuale "Promozione della ricerca e dell'Innovazione" Codice Progetto UM12024L002 POR Umbria FSE 2007-2013 - Asse Capitale Umano Determina Dirigenziale n. 10949 del 27/12/2012". La ricerca è finanziata dalla Regione Umbria ed è svolta presso il Dipartimento di Ingegneria, Università di Perugia. Il titolo del progetto è "Ottimizzazione della performance di parchi eolici tramite l'analisi di dati operazionali"

15/09/2014–30/11/2014 **Assegnista di Ricerca** presso il Dipartimento di Ingegneria, Università di Perugia: "Valutazione di performance e diagnosi di guasti tramite l'analisi di dati SCADA di parchi eolici"

01/09/2013–30/04/2014 **Borsista Post-Lauream** presso il Dipartimento di Ingegneria Industriale, Università di Perugia: "Analisi di dati SCADA di impianti eolici in operation".

01/08/2012–31/07/2013 **Assegnista di Ricerca** presso il Dipartimento di Ingegneria Industriale, Università di Perugia: "Modelli matematici e analisi numerica nell'ingegneria".

RICONOSCIMENTI PROFESSIONALI E ACCADEMICI

Awards

Top 2% scientist secondo il "2022 Annual Scientific Influence Ranking" pubblicato dalla Stanford University

Partecipazione a conferenze scientifiche nazionali e internazionali come presentatore orale (2013-2023)

- The Science of Making Torque from Wind (TORQUE 2016), Monaco (Germania), 05-07/10/2016. Titolo del contributo: Wind Power Forecasting techniques in complex terrain: ANN vs. ANN-CFD hybrid approach.
- 35th UIT Heat Transfer Conference, Ancona, 26-28/06/2017. Titolo del contributo: Wind turbine wake distortion in complex terrain: a numerical and experimental analysis.
- XXIII Congresso - Associazione Italiana di Meccanica Teorica e Applicata (AIMETA 2017), Salerno, 04-07/09/2017. Titolo del contributo: "Numerical and experimental three-dimensional analysis of wakes in complex terrain".
- The Science of Making Torque from Wind (TORQUE 2018), Milano, 20-22/06/2018. Titolo del contributo: "A SCADA data mining method for precision assessment of performance enhancement from aerodynamic optimization of wind turbine blades".
- IN-VENTO-2018, XV Conference of the Italian Association For Wind Engineering. Napoli, 09-12/09/2018. Titolo del contributo: "A SCADA-based method for estimating the energy improvement from wind turbine retrofitting".
- SURVISHNO (Surveillance, Vibrations, Shock and Noise), Lione, 08-10/07/2019. Titolo del contributo: "Numerical and experimental loads analysis on a horizontal-axis wind turbine in yaw".

- AIAS2019, Assisi, 04-07/09/2019. Titolo del contributo: "Mechanical behaviour of wind turbines operating above design conditions".
- XXIV Congresso - Associazione Italiana di Meccanica Teorica e Applicata (AIMETA 2019), Roma, 15-19/09/2019. Titolo del contributo: "Condition monitoring of wind turbine gearboxes through on-site measurement and vibration analysis techniques".
- ISMA 2020 and 2020 International Conference on Uncertainty in Structural Dynamics, Lueven, 07-09/09/2020. Titolo del contributo: "Wind turbine drive-train condition monitoring through tower vibrations measurement and processing".
- IEEE RTSI 2021 6th online Forum on Research and Technologies for Society and Industry Innovation for a smart world. Naples, 06-09/09/2021. Titolo del contributo: "Long Term Wind Turbine Performance Analysis Through SCADA Data: A Case Study".
- WindEurope Technology Workshop 2022. Bruxelles, 23-24/06/2022. Titolo del contributo: "Wind turbine lifecycle assessment and long-term performance evaluation through SCADA data analysis".
- 23rd EEEIC International Conference on Environment and Electrical Engineering. Madrid, 06-09/06/2023. Titolo del contributo: "Experimental Analysis Of The Effect Of Static Yaw Error On Wind Turbine Nacelle Anemometer Measurements".
- IEEE Eurocon 2023. Torino, 06-08/07/2023. Titolo del contributo: "Enhancing Wind Turbine Power Curve Monitoring with eXplainable Artificial Intelligence Techniques".

Partecipazione a Editorial Board di Riviste Scientifiche

- *Associate Editor di IET Renewable Power Generation, sezione Wind Turbine Technology and Control*;
- *Electronics; Energies; Machines; Discover Energy; Diagnostyka, Clean Technologies; Stats, Applied Mechanics*

Guest-Editor di Special Issues

- *Applied Mechanics; Energies; Processes; Sustainability; Wind*: Wind Energy in Multi Energy Systems;
- *Energies*: Wind Turbines and Wind Farms Performance Analysis through Numerical and Experimental Methods;
- *Energies*: Wind turbine power optimization technology;
- *Energies*: Wind Turbine Monitoring through Operation Data Analysis;
- *Electronics*: Advances in Data-Driven Wind Turbine Condition Monitoring;
- *Electronics*: Power Electronics in Italy—Emerging Electronic Power Technologies and Electronic Devices in the Industrial 4.0 Era;
- *Electronics*: Wind Turbine Power Systems;
- *Electronics*: 10th Anniversary of Electronics: New Advances in Systems and Control Engineering;

- *Machines*: Advances in Noises and Vibrations for Machines;
- *Machines*: Estimation and Mitigation of Fatigue Damage for Wind Turbines;
- *Machines*: Wind Turbine Technologies;
- *Machines*: Condition Monitoring for Non-stationary Rotating Machines;
- *Machines*: Lifetime Extension of Industrial Machines;
- *Stats*: Applied Statistics in Engineering;
- *Clean Technologies*: Recent Advances in Wind Energy.

Reviewer Per Conferenze Internazionali

Reviewer di abstract e articoli per:
The Science of Making Torque from Wind (TORQUE 2018), Milano, 20-22 June 2018.

PRINCIPALI ATTIVITÀ DI RICERCA

Analisi di dati per la valutazione e l'interpretazione di performance di turbine eoliche

Le turbine eoliche sono macchine che operano in condizioni non-stazionarie e la loro efficienza dipende in maniera non banale dalle condizioni ambientali e dai parametri operazionali. Ciò nonostante, è fondamentale valutare e interpretare correttamente il comportamento delle turbine eoliche, al fine di ottimizzare le performance e contribuire al miglioramento dell'efficienza e quindi alla diminuzione del costo dell'energia. Si stima che circa il 50% delle turbine eoliche che operano in impianti industriali siano soggette a errori sistematici che ne inficiano il comportamento, come per esempio sbilanciamenti di angolo d'imbardata e angolo di passo. Inoltre, l'usura dei componenti e l'invecchiamento della macchina hanno un impatto sull'efficienza che va quantificato per poter valutare correttamente il ciclo di vita. In questo contesto, l'obiettivo della presente attività di ricerca è lo sviluppo di metodi di analisi dati allo scopo della valutazione e dell'interpretazione delle performance e del comportamento delle turbine eoliche. Le turbine eoliche sono infatti equipaggiate di sistemi SCADA (Supervisory Control And Data Acquisition) che misurano e stoccano decine, se non centinaia, di canali di misura che descrivono le condizioni ambientali, i parametri di lavoro delle macchina, il comportamento termico e meccanico e così via. Quest'attività è quindi caratterizzata dallo sviluppo di appropriate tecniche statistiche di analisi dati, con particolare attenzione agli ultimi sviluppi nel campo del Machine Learning, come gli algoritmi di eXplainability.

LISTA DI PUBBLICAZIONI SCIENTIFICHE DAL 2013 TO 2023

Gli indici bibliometrici della produzione scientifica dal 2013 al 2023 sono i seguenti al giorno 10 Luglio 2023:

H-index: 21
Numero di citazioni totali: 1271
Numero di articoli su rivista: 70

Articoli su rivista

(JP1) Astolfi, D., De Caro, F. & Vaccaro, A.
Condition Monitoring of Wind Turbine Systems by Explainable Artificial Intelligence Techniques
(2023) Sensors, 23(12), 5376.

(JP2) Astolfi, D.
Wind Turbine Drivetrain Condition Monitoring through SCADA-Collected Temperature Data: Discussion of Selected Recent Papers.
(2023) Energies, 16(9), 3614.

(JP3) Astolfi, D., Pandit, R., Lombardi, A., & Terzi, L.
Diagnosis of wind turbine systematic yaw error through nacelle anemometer measurement analysis.
(2023) Sustainable Energy, Grids and Networks, 34, 101071.

(JP4) Pandit, R., Astolfi, D., Hong, J., Infield, D., & Santos, M.
SCADA data for wind turbine data-driven condition/performance monitoring: A review on state-of-art, challenges and future trends.
(2023) Wind Engineering 47(2), 422-441.

(JP5) Pandit, R. K., Astolfi, D., & Durazo Cardenas, I.
A Review of Predictive Techniques Used to Support Decision Making for Maintenance Operations of Wind Turbines.
(2023) Energies, 16(4), 1654.

(JP6) Castellani, F., Pandit, R., Natili, F., Belcastro, F., & Astolfi, D.
Advanced Methods for Wind Turbine Performance Analysis Based on SCADA Data and CFD Simulations.
(2023) Energies, 16(3), 1081.

(JP7) Murgia, A., Verbeke, R., Tsiporkova, E., Terzi, L., & Astolfi, D.
Discussion on the Suitability of SCADA-Based Condition Monitoring for Wind Turbine Fault Diagnosis through Temperature Data Analysis.
(2023) Energies, 16(2), 620.

(JP8) Astolfi, D., Pandit, R., Lombardi, A., & Terzi, L.
Multivariate Data-Driven Models for Wind Turbine Power Curves including Sub-Component Temperatures.
(2023) Energies, 16(1), 165.

(JP9) Astolfi, D., Pandit, R., Gao, L., & Hong, J.
Individuation of Wind Turbine Systematic Yaw Error through SCADA Data.
(2022) Energies, 15(21), 8165.

(JP10) Pandit, R., Astolfi, D., Tang, A. M., & Infield, D.
Sequential Data-Driven Long-Term Weather Forecasting Models' Performance Comparison for Improving Offshore Operation and Maintenance Operations.
(2022) Energies, 15(19), 7233.

(JP11) Astolfi, D., Pandit, R., Terzi, L., & Lombardi, A.
Discussion of wind turbine performance based on SCADA data and multiple test case analysis.
(2022) Energies, 15(15), 5343.

(JP12) Astolfi, D., Pandit, R., Celesti, L., Lombardi, A., & Terzi, L.
SCADA data analysis for long-term wind turbine performance assessment: A case study.
(2022) Sustainable Energy Technologies and Assessments, 52, 102357.

(JP13) Cascianelli, S., Astolfi, D., Castellani, F., Cucchiara, R., & Fravolini, M.
Wind Turbine Power Curve Monitoring Based on Environmental and Operational Data
(2022) IEEE Transaction on Industrial Informatics, 18(8), pp. 5209-5218

(JP14) Astolfi, D., & Pandit, R.
Wind turbine performance decline with age.
(2022) Energies, 15(14), 5225.

(JP15) Campagnolo, F., Castellani, F., Natili, F., Astolfi, D., & Mühle, F.
Wind Tunnel Testing Of Yaw By Individual Pitch Control Applied To Wake Steering.
(2022) Frontiers in Energy Research, 10, 883889

(JP16) Astolfi, D., & Castellani, F. (2022).
Editorial on the Special Issue "Wind Turbine Monitoring through Operation Data Analysis".
(2022) Energies, 15(10), 3664.

(JP17) Astolfi, D., Pandit, R., Celesti, L., Vedovelli, M., Lombardi, A., & Terzi, L.
Data-Driven Assessment of Wind Turbine Performance Decline with Age and Interpretation Based on Comparative Test Case Analysis.
(2022) Sensors, 22(9), 3180.

(JP18) Astolfi, D., & Pandit, R. .
Multivariate wind turbine power curve model based on data clustering and polynomial LASSO regression. (2022) Applied Sciences, 12(1), 72.

(JP19) Castellani, F., Eltayesh, A., Natili, F., Tocci, T., Becchetti, M., Capponi, L., Astolfi, D., & Rossi, G.
Wind Flow Characterisation over a PV Module through URANS Simulations and Wind Tunnel Optical Flow Methods
(2021) Energies, 14(20), 6546

(JP20) Astolfi, D., Castellani, F., Lombardi, A., & Terzi, L.
Data-driven wind turbine aging models.
(2021) Electric Power Systems Research, 201, 107495.

(JP21) Astolfi, D.
Perspectives on SCADA Data Analysis Methods for Multivariate Wind Turbine Power Curve Modeling.
(2021) Machines, 9(5), 100.

(JP22) Castellani, F., Astolfi, D., & Natili, F.
SCADA Data Analysis Methods for Diagnosis of Electrical Faults to Wind Turbine Generators.
(2021) Applied Sciences, 11(8), 3307.

(JP23) Astolfi, D., Castellani, F., & Natili, F.
Wind Turbine Multivariate Power Modeling Techniques for Control and Monitoring Purposes.
(2021) Journal of Dynamic Systems, Measurement, and Control, 143(3), 034501.

(JP24) Astolfi, D., Byrne, R., & Castellani, F.
Estimation of the Performance Aging of the Vestas V52 Wind Turbine through Comparative Test Case Analysis.
(2021) Energies, 14(4), 915.

(JP25) Astolfi, D., Castellani, F., Lombardi, A., & Terzi, L.
Multivariate SCADA data analysis methods for real-world wind turbine power curve monitoring.
(2021) Energies, 14(4), 1105.

(JP26) Astolfi, D.
Wind Turbine Operation Curves Modelling Techniques.
(2021) Electronics, 10(3), 269.

(JP27) Astolfi, D., Castellani, F. & Natili, F.
Data-Driven Methods for the Analysis of Wind Turbine Yaw Control Optimization
(2021) Journal of Solar Energy Engineering, 143(1)

(JP28) Natili, F., Castellani, F., Astolfi, D., & Becchetti, M.
Video-Tachometer Methodology for Wind Turbine Rotor Speed Measurement.
(2020) Sensors, 20(24), 7314.

(JP29) Astolfi, D., Byrne, R., & Castellani, F.
Analysis of wind turbine aging through operation curves.
(2020) Energies, 13(21), 5623.

(JP30) Astolfi, D., Castellani, F., Becchetti, M., Lombardi, A. & Terzi, L.
Wind Turbine Systematic Yaw Error: Operation Data Analysis Techniques for Detecting It and Assessing Its Performance Impact
(2020) Energies, 13(9), 2351

(JP31) Byrne, R., Astolfi, D., Castellani, F., & Hewitt, N. J.
A Study of Wind Turbine Performance Decline with Age through Operation Data Analysis.
(2020) Energies, 13(8), 2086.

(JP32) Castellani, F., & Astolfi, D.
Editorial on Special Issue “Wind Turbine Power Optimization Technology”.
(2020) Energies, 13(7), 1796

(JP33) Castellani, F., Garibaldi, L., Daga, A. P., Astolfi, D., & Natili, F.
Diagnosis of Faulty Wind Turbine Bearings Using Tower Vibration Measurements.
(2020) Energies, 13(6), 1474

(JP34) Mana, M., Astolfi, D., Castellani, F., & Meißner, C.
Day-Ahead Wind Power Forecast Through High-Resolution Mesoscale Model: Local Computational Fluid Dynamics Versus Artificial Neural Network Downscaling.
(2020) Journal of Solar Energy Engineering, 142(3).

(JP35) Astolfi, D., Castellani, F., & Terzi, L.
An Operation Data-Based Method for the Diagnosis of Zero-Point Shift of Wind Turbines Yaw

Angle.
(2020) Journal of Solar Energy Engineering, 142(2).

(JP36) Astolfi, D., Castellani, F., & Natili, F.
Wind Turbine Yaw Control Optimization and Its Impact on Performance.
(2019) Machines, 7(2), 41.

(JP37) Castellani, F., Astolfi, D., Peppoloni, M., Natili, F., Buttà, D., & Hirschl, A.
Experimental Vibration Analysis of a Small Scale Vertical Wind Energy System for Residential Use.
(2019) Machines, 7(2), 35.

(JP38) Astolfi, D., Castellani, F., & Natili, F.
Wind turbine generator slip ring damage detection through temperature data analysis
(2019) Diagnostyka, 20(3), 3-9

(JP39) Astolfi, D., Castellani, F., & Terzi, L.
Definition and Interpretation of Wind Farm Efficiency in Complex Terrain: A Discussion.
(2019) Journal of Energy Resources Technology, 141(5), 055501.

(JP40) Astolfi, D., Castellani, F., Fravolini, M. L., Cascianelli, S., & Terzi, L.
Precision Computation of Wind Turbine Power Upgrades: An Aerodynamic and Control Optimization Test Case.
(2019) Journal of Energy Resources Technology, 141(5), 051205.

(JP41) Castellani, F., Astolfi, D., Natili, F., & Mari, F.
The Yawing Behavior of Horizontal-Axis Wind Turbines: A Numerical and Experimental Analysis.
(2019) Machines, 7(1), 15.

(JP42) Astolfi, D.
A Study of the Impact of Pitch Misalignment on Wind Turbine Performance.
(2019) Machines, 7(1), 8.

(JP43) Astolfi, D., Castellani, F., Lombardi, A., & Terzi, L.
About the extension of wind turbine power curve in the high wind region.
(2019) Journal of Solar Energy Engineering, 141(1), 014501.

(JP44) Astolfi, D., & Castellani, F.
Wind Turbine Power Curve Upgrades: Part II.
(2019) Energies, 12(8), 1503.

(JP45) Natili, F., Castellani, F., Astolfi, D., & Becchetti, M.
Experimental and Signal Processing Techniques for Fault Diagnosis on a Small Horizontal-Axis Wind Turbine Generator.
(2019) Vibration, 2(2), 187-200.

(JP46) Astolfi, D., Castellani, F., & Terzi, L.
Wind Turbine Power Curve Upgrades.
(2018) Energies, 11(5), 1300.

(JP47) Castellani, F., Astolfi, D., Becchetti, M., & Berno, F.
Experimental and Numerical Analysis of the Dynamical Behavior of a Small Horizontal-Axis Wind Turbine under Unsteady Conditions: Part I.
(2018) Machines, 6(4), 52.

(JP48) Castellani, F., Sdringola, P., Astolfi, D.
Analysis of Wind Turbine Wakes Through Time-Resolved and SCADA Data of an Onshore Wind Farm
(2018) The Journal of Solar Energy Engineering, Transactions of the ASME, 140(4), 044501

(JP49) Astolfi, D., Castellani, F., Terzi, L.
A study of wind turbine wakes in complex terrain through RANS simulation and SCADA data
(2018) The Journal of Solar Energy Engineering, Transactions of the ASME, 140(3), 031001

(JP50) Castellani, F., Astolfi, D., Becchetti, M., Berno, F., Cianetti, F., Cetrini, A.
Experimental and Numerical Vibrational Analysis of a Horizontal-Axis Micro-Wind Turbine
(2018) Energies, 11(2), 456

(JP51) Sdringola, P., Proietti, S., Astolfi, D., & Castellani, F.
Combined Heat and Power Plant and District Heating and Cooling Network: A Test-Case in Italy With Integration of Renewable Energy.
(2018) Journal of Solar Energy Engineering, 140(5), 054502.

(JP52) Scappaticci, L., Castellani, F., Astolfi, D., Garinei, A.
Diagnosis of vortex induced vibration of a gravity damper
(2018) Diagnostyka, 19(2), 31-39

(JP53) Castellani, F., Buzzoni, M., Astolfi, D., D'Elia, G., Dalpiaz, G., Terzi, L.
Wind Turbine Loads Induced by Terrain and Wakes: An Experimental Study through Vibration Analysis and Computational Fluid Dynamics
(2017) Energies, 10(11), 1839

(JP54) Garinei, A., Castellani, F., Astolfi, D., Pucci, E., & Scappaticci, L.
Large Amplitude Oscillatory Shear From Viscoelastic Model With Stress Relaxation.
(2017) Journal of Applied Mechanics, 84(12), 121008.

(JP55) Castellani, F., Scappaticci, L., Bartolini, N., Astolfi, D.
Numerical and experimental investigation of a monotube hydraulic shock absorber
(2017) Archive of Applied Mechanics, 87(12), 1929-1946.

(JP56) Astolfi, D., Castellani, F., Pignattini, R.
A study of vortices in the wake of a road motorcycle through wind tunnel vibration measurement
(2017) International Journal of Vehicle Noise and Vibration, 13(3-4), 252-266

(JP57) Astolfi, D., Scappaticci, L., Terzi, L.
Fault Diagnosis of Wind Turbine Gearboxes Through Temperature and Vibration Data
International Journal of Renewable Energy Research (IJRER) 7 (2), 965-976

(JP58) Castellani, F., Astolfi, D., Mana, M., Piccioni, E., Becchetti, M., Terzi, L.
Investigation of terrain and wake effects on the performance of wind farms in complex terrain using numerical and experimental data.
(2017) Wind Energy, 20(7), 1277-1289.

(JP59) Astolfi, D., Castellani, F., Scappaticci, L., Terzi, L.
Diagnosis of wind turbine misalignment through SCADA data.
(2017) Diagnostyka, Vol. 18, No. 1, 17-24.

(JP60) Proietti, S., Sdringola, P., Castellani, F., Astolfi, D., Vuillermoz, E.
On the contribution of renewable energies for feeding a high altitude Smart Mini Grid
(2017) Applied Energy - Volume 185, Part 2, 1694–1701

(JP61) Castellani, F., Astolfi, D., Sdringola, P., Proietti, S., Terzi, L.
Analyzing wind turbine directional behavior: SCADA data mining techniques for efficiency and power assessment
(2017) Applied Energy- Volume 185, Part 2, 1076–1086

(JP62) Scappaticci, L., Bartolini, N., Castellani, F., Astolfi, D., Garinei, A., Pennicchi, M.
Optimizing the design of horizontal-axis small wind turbines: From the laboratory to market
(2016) Journal of Wind Engineering and Industrial Aerodynamics, 154, 58-68.

(JP63) Astolfi, D., Castellani, F., Terzi, L.
Mathematical methods for SCADA data mining of onshore wind farms: Performance evaluation and wake analysis
(2016) Wind Engineering, 40 (1), 69-85.

(JP64) Morettini, G., Bartolini, N., Astolfi, D., Scappaticci, L., Becchetti, M., Castellani, F.
Experimental diagnosis of cavitation for a hydraulic monotube shock absorber
(2016) Diagnostyka, 17 (3), 75-80.

(JP65) Castellani, F., Astolfi, D., Burlando, M., Terzi, L.
Numerical modelling for wind farm operational assessment in complex terrain
(2015) Journal of Wind Engineering and Industrial Aerodynamics, 147, 320-329.

(JP66) Astolfi, D., Castellani, F., Garinei, A., Terzi, L.
Data mining techniques for performance analysis of onshore wind farms
(2015) Applied Energy, 148, 220-233.

(JP67) Castellani, F., Garinei, A., Terzi, L., Astolfi, D.
Applied statistics for extreme wind estimate
(2015) Wind Energy, 18 (4), 613-624.

(JP68) Astolfi, D., Castellani, F., Terzi, L. Fault prevention and diagnosis through SCADA temperature data analysis of an onshore wind farm
(2014) Diagnostyka, 15 (2), 71-78.

(JP69) Castellani, F., Garinei, A., Terzi, L., Astolfi, D., Gaudiosi, M.
Improving windfarm operation practice through numerical modelling and Supervisory Control and Data Acquisition data analysis
(2014) IET Renewable Power Generation, 8 (4), 367-379.

(JP70) Castellani, F., Garinei, A., Terzi, L., Astolfi, D., Moretti, M., Lombardi, A.
A new data mining approach for power performance verification of an on-shore wind farm
(2013) Diagnostyka, 14 (4), 35-42.

Atti di convegno

(CP1) Murgia, A., Cabral, H., Tsiporkova, E., Astolfi, D., & Terzi, L.
Data-driven characterization of performance trends in ageing wind turbines.
(2023) In Journal of Physics: Conference Series (Vol. 2507, No. 1, p. 012019). IOP Publishing.

(CP2) Castellani, F., Natili, F., Astolfi, D., Hirschl, A., & Peppoloni, M.
Vibration damping of a vertical axis wind turbine in operating conditions.
(2022) In Journal of Physics: Conference Series (Vol. 2265, No. 4, p. 042081). IOP Publishing.

(CP3) Castellani, F., Astolfi, D., Natili, F., Vedovelli, M., & Khedr, A.
Interpretation of wind turbine performance decline with age based on SCADA data analysis.
(2022) In IOP Conference Series: Earth and Environmental Science (Vol. 1073, No. 1, p. 012002). IOP Publishing.

(CP4) Castellani, F., Khedr, A., Astolfi, D., Celesti, L., Natili, F., & Vedovelli, M.
Study of blockage and wakes for an on-shore Wind Farm using SCADA data and CFD simulations.
(2022) In IOP Conference Series: Earth and Environmental Science (Vol. 1073, No. 1, p. 012004). IOP Publishing.

(CP5) Terzi, L. & Astolfi, D.
SCADA data analysis for wind turbine aging interpretation
(2021) WindEurope Electric City 2021 - WindEurope's Annual On- and Offshore Wind Energy Event, Copenhagen, 23-25 November 2021.

(CP6) Astolfi, D., Malgaroli, M., Spertino, F., Amato, A., Lombardi, A., & Terzi, L.
Long Term Wind Turbine Performance Analysis Through SCADA Data: A Case Study
(2021) 2021 IEEE 6th International Forum on Research and Technology for Society and Industry (RTSI)

(CP7) Natili, F., Campagnolo, F., Castellani, F., Bottasso, C.L., Astolfi, D. & Becchetti, M.
Experimental analysis of yaw by individual pitch control
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Il sottoscritto dichiara che il contenuto del seguente curriculum corrisponde a verità, ai sensi degli articoli 46 e 47 del D.P.R. n 445/2000.

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