

Notizie biografiche e carriera

Nato a Bologna il 21-X-1956. Laureato in Ingegneria elettrotecnica nell' AA 1980/81 con lode e medaglia 'Luigi Donati'.

Abilitato alla professione di ingegnere nel 1982. Ricercatore universitario nel 1983, professore associato nel 1992, straordinario nel 2000, ordinario dall'ottobre 2003, presso l'Università di Bologna.

Attività didattica

Presso la Facoltà/Scuola d'ingegneria dell'Università di Bologna

- Centrali elettriche dall'AA 1990-91 all'AA 1998-1999
- Sistemi elettrici per l'energia (LM) dall'AA 1998-1999 all'AA 2015-2016
- Elementi di sistemi elettrici per l'energia (LT) dall'AA 2001-2002 all'AA 2005-2006
- Elementi di Impianti e Sicurezza elettrica dall'AA 2006-2007 all'AA 2013-2014 (Laurea Magistrale in Ingegneria Civile)
- Produzione e conversione dell'energia elettrica (Laurea in Ingegneria Energetica) dal 2014 al 2018
- *Electrical power system and smart grids* nell'A.A. 2015-16 e – Modulo 2 – dall'A.A. 2019-20 (Laurea Magistrale in Ingegneria dell'Energia elettrica - curriculum in Inglese)
- Impianti elettrici dall' A.A. 2016-17 ad oggi
- Sistemi elettrici per l'energia dall'AA 2016-17 (Laurea Magistrale in Advanced design) ad oggi
- Sistemi elettrici per l'energia e *smart grids* dall'AA 2018-19 ad oggi

Docenza in Master universitari post-laurea

- "Innovazione della manutenzione e gestione dei patrimoni urbani ed immobiliari", nel 2003;
- "Previsione, prevenzione e controllo del rischio industriale" nel 2004;
- "ENI Corporate Master: Progettazione di Impianti per lo Sviluppo di Campi Petroliferi Offshore" nel 2007;
- "ENI Corporate Master: progettazione di impianti oil & gas" nel 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015;
- "Electrical Hazard, Master SAIPEM" nel 2011, 2012, 2013, 2014;
- "Sicurezza e prevenzione nell'ambiente di lavoro, Master Unibo" negli anni 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019,2020, 2021,2022.

Presso il Politecnico Federale di Losanna

- docente del "Cours Post gradé Génie Electrique" dal 2001 al 2003.
- docente del corso "Distributed Generation from Renewables" nel 2013

Nell'associazione europea EES-UETP

- organizzatore e docente di diversi corsi post laurea
- chairman del *Program Committee* dal 2002 al 2007

Attività scientifica

Responsabile Scientifico del Laboratorio di Ingegneria dei sistemi elettrici di potenza (LISEP) del Dipartimento di Ingegneria Elettrica dal 1994.

Attività scientifica principalmente sui seguenti temi:

transitori elettromagnetici nei sistemi elettrici, e in particolare quelli provocati da scariche atmosferiche, ai fini del miglior coordinamento delle protezioni
analisi del comportamento dinamico degli impianti di produzione e dei sistemi elettrici di potenza con particolare riferimento alle condizioni di riavvio del sistema dopo un blackout e all'influenza della modellazione dei carichi sull'analisi di collasso della tensione
smart grid, gestione delle reti di distribuzione in presenza di generazione distribuita, anche da fonte rinnovabile
localizzazione dei guasti nelle reti di distribuzione

Phasor Measurement Units (PMUs)
impianti per la vetrificazione 'in situ' dei rifiuti
smart city e comunità energetiche

Pubblicazioni

Autore e/o coautore di oltre 380 lavori su riviste varie e su atti di conferenze nazionali ed internazionali, di vari capitoli di altrettanti volumi editi da IEE, Kluwer, Rumanian Academy of Science e WIT press, IEEE-Wiley, di due 'standard' della IEEE e di alcune Technical Brochure della CIGRE. V. elenco.

h-index

Scopus=42 (GoogleScholar=55)

Keynote, plenary speaker, invited lecturer

Invited Keynote plenary speaker e lecturer a convegni internazionali (SIPDA 1997 – San Paolo, Brasile; ISH '01–Bangalore, India; ICHQP'06–Lisbona, Portogallo; PSCC 2008–Glasgow, UK; IPST'09 – Kyoto, Giappone; APECM'10 – Beijing, Cina; ISGT 20, IWEC'11 – Kyoto; IEEE International Forum Smart Grids for Smart Cities Paris, 2016; RTSI'18–Palermo; MedPower '18–Dubrovnik; SynEnergy Med '19–Cagliari; PowerTech'19 – Milano) e presso università straniere (Politecnico di Losanna, Università dell'Arizona, 'Bangalore Institute of Science', Università di San Paolo, Politecnico di Lisbona, Università Politecnica di Bucarest, Università Doshisa di Kyoto, Università di Siviglia, 'Seoul National University', Università di Budapest, Illinois Institute of Technology, Università Tsinghua di Pechino, Shandong University a Jinan, Università di Lubiana, Tsinghua University, Pechino, Shandong University a Jinan). Per l'elenco aggiornato v. lista pubblicazioni.

Progetti di ricerca

Responsabile scientifico di diversi contratti di ricerca tra il Dipartimento di afferenza ed altri enti di ricerca e/o istituti universitari italiani e stranieri, responsabile locale di diversi progetti finanziati dalla Commissione Europea, responsabile nazionale di due PRIN (2008 e 2017), locale di una mezza dozzina, su vari temi: riavvio del sistema elettrico in seguito a 'black-out', coordinamento dell'isolamento delle reti di distribuzione, *smart grid* e gestione delle reti di distribuzione attive dell'energia elettrica con generazione distribuita, la protezione delle linee e degli aerogeneratori contro il fulmine, la protezione dei sistemi elettrici contro i disturbi elettromagnetici, la localizzazione dei guasti nelle reti di distribuzione, *smart citye local energy community*.

Attività/servizi istituzioni nazionali

- Per il Ministero dell'Università e della Ricerca (MUR)
- *National representative* in Horizon Europe – Mission Climate Neutral and Smart Cities dal Novembre 2019
- Rappresentante del MUR presso il Ministero della Transizione Ecologica dal Febbraio 2022 al luglio 2022 per la revisione della Strategia Nazionale per lo Sviluppo Sostenibile e del Piano di Azione per la Coerenza delle Politiche per lo Sviluppo Sostenibile

Per l'Università di Bologna

- Coordinatore della commissione per i Servizi generali (1995-1999),
- Membro Commissione Finanziamenti della Facoltà di Ingegneria (2002-2006)
- Membro dell'Osservatorio della ricerca dell'Ateneo (dal 2004 al 2010)
- Vice Preside della Facoltà di Ingegneria dal novembre 2008 sino al termine (2012, inizio della Scuola)

- Coordinatore del Corso di Studio in Ingegneria dell'Energia Elettrica dall'A.A. 2012-13 per due mandati consecutivi (sino all'A.A. 2017-18)
- Coordinatore del Gruppo tematico di Ateneo 'Energy' dal 2017 al 2021
- Selezionato dall'Ateneo come membro del Comitato Tecnico Scientifico PER (Piano Energetico Regionale)

Altre attività

- Membro del GEV per la VQR 2011-2014
- Presidente del Gruppo Universitario Nazionale dei docenti di Sistemi elettrici per l'energia (SSD ING/IND-33) dal gennaio 2013 al dicembre 2015.
- Presidente della Sezione AEIT dei Bologna dal maggio 2016 al gennaio 2019.
- Presidente del Comitato Tecnico 81 "Protezione contro i fulmini" dal luglio 2016.
- Membro del Consiglio di Indirizzo della Fondazione del Monte di Bologna e Ravenna dal 2019 ad oggi

Attività/Servizi istituzioni internazionali

- Nell'International council on large electric systems (CIGRE)
- Membro di diversi gruppi di lavoro
- Convener del gruppo di lavoro "Lightning" sino al 2007
- Chairman dello Study Committee C4 "System technical performances" per il periodo 2006-2012.

Nella IEEE

- Membro dei gruppi di lavoro "Lightning performance of distribution lines" e "Distributed Resources: Modelling and Analysis"
- Chairman della International Conference IEEE PES 2002 Bologna PowerTech, June 2002
- Chairman dell'International Steering Committee della Conferenza internazionale PowerTech dal 2002 al 2007
- Chairman dell'Italian PES Chapter dal 2002 al 2007
- Region 8 Representative per la "IEEE PES Region 8 (Europe, Middle East and Africa)" e membro dell'IEEE PES Governing Board nel biennio 2009-2010
- Chair, Technical Program Committee, IEEE Smart Grids World Forum 2012
- Membro dello IEEE Smart City Steering Committee nel 2014-2015
- Chair, IEEE/PES Region 8 Scholarship Plus Committee since 2014.
- Member of the IEEE-PES Fellow Committee from 2014 to 2018;
- Member of the IEEE Fellow Committee from 2022 to date.

Nell'EES-UETP

- Chairman del Technical Program Committee nel periodo 2002-2007.

Nella Commissione Europea

- Panel member (Systems and Communication Engineering) dell'ERC Advanced Grants Call 2015, 2017, 2019, 2020
- Rappresentante con diritto di voto dell'Università di Bologna per EERA AISBL.

Nell'International Conference on Lightning Protection

- Membro dell'International Scientific Committee dal settembre 2002
- Vice-Presidente dell'International Scientific Committee dal settembre 2015

- Presidente dell'International Scientific Committee dal settembre 2021

Attività editoriali

- *Regional editor* dell'Electric Power Systems Research Journal (EPSR), Elsevier dal 2005
- *Editor in Chief* della stessa rivista dal 2010 al 2021
- *Guest editor* di alcune "special issue" della stessa rivista
- *Lead Guest editor della Special issue on Smart Cities dei Proceedings of the IEEE, Vol 106, N. 4, aprile 2018.*
- *Membro dell'editorial board* del Journal of Electric Power and Energy Sources (JEPES), Elsevier

Riconoscimenti e premi

- Best paper award, "CIGRE- IFAC International Symposium on Control of Power Plants and Power Systems", Brussels, 2000 for the paper "The black-startup simulation of a repowered thermoelectric unit", in cooperation with A. Borghetti, G. Migliavacca and S. Spelta
- Cigre Technical Committee Award, 2004
- IEEE ed IET Fellowship, 2007
- Best paper award, "Analysis of black-startup and islanding capabilities of a combined cycle power plant" in cooperation with A. Borghetti, M. Bosetti, M. Paolone, G. Ciappi, and A. Solari, 43rd Int. Universities Power Engineering Conference (UPEC), Padua, Sept. 1-4, 2008
- Laurea *Honoris Causa* dall'Università Politecnica di Bucarest, 2008
- *Membro Corrispondente Residente* della Accademia delle Scienze dell'Istituto di Bologna dal 2011
- 'Golde Award' della International Conference on Lightning Protection, 2012
- CIGRE Fellowship, 2016
- *Membro 'Benedettino'* (socio effettivo) della Accademia delle Scienze dell'Istituto di Bologna dal 2017.
- *Advisor Professor* della Tsinghua University dal 2021

Principali pubblicazioni

Lavori su rivista

[1] Ishimoto K.; Tossani F.; Napolitano F.; Borghetti A.; Nucci C.A., LEMP and ground conductivity impact on the direct lightning performance of a medium-voltage line, «ELECTRIC POWER SYSTEMS RESEARCH», 2023, 214, pp. 108845 - 108853

[2] K. Ishimoto, Tossani, F., Napolitano, F., Borghetti, A., Nucci, C.A., Direct Lightning Performance of Distribution Lines with Shield Wire Considering LEMP Effect. DOI:10.1109/TPWRD.2021.3053620. pp.76-84. In IEEE TRANSACTIONS ON POWER DELIVERY – 2022, ISSN:0885-8977 vol. 37 (1)

[3] Cappellaro, Francesca; D'Agosta, Gianluca; De Sabbata, Piero; Barroco, Felipe; Carani, Claudia; Borghetti, Alberto; Lambertini, Luca; Nucci, Carlo Alberto, Implementing energy transition and SDGs targets throughout energy community schemes, «JOURNAL OF URBAN ECOLOGY», 2022, 8, pp. 1 – 9

[4] F. Tossani, F. Napolitano, K. Ishimoto, A. Borghetti, C.A. Nucci, "A New Calculation Method of the Lightning Electromagnetic Field Considering Variable Return Stroke Velocity." DOI:10.1109/TEM.2020.3015139. pp.152-159. In IEEE Trans on EMC - ISSN:0018-9375 vol. 63 (1), 2021.

[5] J.D.R. Penalzoza, Borghetti, A., Napolitano, F., Tossani, F., Nucci, C.A., "A New Transient-Based Earth Fault Protection System for Unearthed Meshed Distribution Networks", DOI:10.1109/

TPWRD.2020.3022977. pp.2585-2594. In IEEE TRANSACTIONS ON POWER DELIVERY - ISSN:0885-8977 vol. 36 (5), 2021.

[6]A. Borghetti, Ishimoto, K., Napolitano, F., Nucci, C.A., Tossani, F., "Assessment of the Effects of the Electromagnetic Pulse on the Response of Overhead Distribution Lines to Direct Lightning Strikes", DOI:10.1109/OAJPE.2021.3099596. pp.522-531. In IEEE OPEN ACCESS JOURNAL OF POWER AND ENERGY - ISSN:2687-7910 vol. 8, 2021

[7]S.O.M. Boulanger, Massari, M., Longo, D., Turillazzi, B., Nucci, C.A., "Designing collaborative energy communities: A european overview", DOI:10.3390/en14248226. pp.8226-8226. In ENERGIES - ISSN:1996-1073 vol. 14 (24), 2021.

[8]J.D. Rios Penalzoza, Adu, J.A., Borghetti, A., Napolitano F., Tossani, F., Nucci, C.A., "Influence of load dynamic response on the stability of microgrids during islanding transition", Electric Power Systems Research, 2021, 190, 106607

[9]F. Tossani, Napolitano, F., Borghetti, A., Nucci, C.A. Piantini, A., Kim, Y.-S., Choi, S.-K., "Influence of the presence of grounded wires on the lightning performance of a medium-voltage line", Electric Power Systems Research, DOI:10.1016/j.epr.2021.107206. pp.107206-107212.

[10]J.D. Rios Penalzoza, Borghetti, A., Napolitano, F., Tossani, F., Nucci, C.A., "Performance analysis of a transient-based earth fault protection system for unearthed and compensated radial distribution networks", Electric Power Systems Research, 107306, ISSN:0378-7796 vol. 197, 2021.

[11]F. Napolitano, Penalzoza, J.D.R., Tossani, F., Borghetti, A., Nucci, C.A., "Three-phase state estimation of a low-voltage distribution network with Kalman filter", DOI:10.3390/en14217421. pp.1-19. In ENERGIES - ISSN:1996-1073 vol. 14, 2021.

[12]F. Barroco Fontes Cunha, C. Carani, C.A. Nucci, M. Santana Silva, E. Andrade Torres, "Transitioning to a low carbon society through energy communities: Lessons learned from Brazil and Italy", Energy Research and Social Science, 2021, 75, 101994.

[13]G. Pulazza, N. Zhang, C. Kang, C.A. Nucci, "Transmission Planning with Battery-based Energy Storage Transportation for Power Systems with High Penetration of Renewable Energy", DOI:10.1109/TPWRS.2021.3069649. pp.4928-4940. In IEEE TRANSACTIONS ON POWER SYSTEMS - ISSN:0885-8950 vol. 36 (6), 2021.

[14]A. Borghetti, Ferraz, G.M.F., Napolitano, F., Nucci, C.A., Piantini, A., Tossani, F., "Lightning protection of a multi-circuit HV-MV overhead line", Electric Power Systems Research, 2020, 180, 106119

[15]F. Napolitano, F. Tossani, A. Borghetti, C.A. Nucci and F. Rachidi, "Estimation of the expected annual number of flashovers in power distribution lines due to negative and positive lightning", Electric Power Systems Research, 176. 2019.

[16]F. Tossani, F. Napolitano, A. Borghetti, C.A. Nucci, "Influence of the Radial Electric Field Appraisal on Lightning-Induced Overvoltages Statistical Assessment", IEEE Transactions on Electromagnetic Compatibility, 61(3): 1-7. 2019.

[17]Chicco, Gianfranco; Crossley, Peter; Nucci, Carlo Alberto, Electric Power Engineering Education: Cultivating the Talent in the United Kingdom and Italy to Build the Low-Carbon Economy of the Future, «IEEE POWER & ENERGY MAGAZINE», 2018, 16, Article number: 8438372, pp. 53 - 63

[18]F. Napolitano, F. Tossani, A. Borghetti and C. A. Nucci, "Lightning Performance Assessment of Power Distribution Lines by Means of Stratified Sampling Monte Carlo Method," in *IEEE Transactions on Power Delivery*, vol. 33, no. 5, pp. 2571-2577, Oct. 2018, doi: 10.1109/TPWRD.2018.2795743.

- [19]F. Tossani, A. Borghetti, F. Napolitano, A. Piantini and C. A. Nucci, "Lightning Performance of Overhead Power Distribution Lines in Urban Areas," in IEEE Transactions on Power Delivery, vol. 33, no. 2, pp. 581-588, April 2018, doi: 10.1109/TPWRD.2017.2658183.
- [20]O. Andrisano; I. Bartolini; P. Bellavista; A. Boeri; L. Bononi; A. Borghetti; A. Brath; G.E. Corazza; A. Corradi; S. de Miranda; F. Fava; L. Foschini; G. Leoni; D. Longo; M. Milano; F. Napolitano; C.A. Nucci; G. Pasolini; M. Patella; T. Salmon Cinotti; D. Tarchi; F. Ubertini; D. Vigo, "The Need of Multidisciplinary Approaches and Engineering Tools for the Development and Implementation of the Smart City Paradigm", Proceedings of the IEEE, Volume: 106, Issue: 4, 2018.
- [21]C.L. Bak, A. Borghetti, J. Glasdam, J. Hjerrild, F. Napolitano, C. A. Nucci, and M. Paolone, "Vacuum circuit breaker modelling for the assessment of transient recovery voltages: Application to various network configurations", Electr. Power Syst. Res., vol. 156: Elsevier B.V., pp. 35–43, 2018.
- [22]A. Borghetti, F. Napolitano, C. A. Nucci, and F. Tossani, "Influence of the return stroke current waveform on the lightning performance of distribution lines", IEEE Transactions on Power Delivery, vol. 32, no. 4, pp. 1800-1808, Aug, 2017.
- [23]A. Borghetti, F. Napolitano, C. A. Nucci, and F. Tossani, "Response of distribution networks to direct and indirect lightning: Influence of surge arresters location, flashover occurrence and environmental shielding", Electr. Power Syst. Res., vol. 153: Elsevier, pp. 73–81, dec, 2017.
- [24]A. Borghetti, R. Bottura, M. Barbiroli, and C. A. Nucci, "Synchrophasors-based Distributed Secondary Voltage/VAR Control via Cellular Network", IEEE Trans. Smart Grid, vol. PP, no. 99, pp. 1, Jan 2017.
- [25]Tossani, Fabio; Napolitano, Fabio; Rachidi, Farhad; Nucci, Carlo Alberto, An Improved Approach for the Calculation of the Transient Ground Resistance Matrix of Multiconductor Lines, «IEEE TRANSACTIONS ON POWER DELIVERY», 2016, 31, Article number: 7328296, pp. 1142 – 1149
- [26]Bedogni, Luca; Bononi, Luciano; Borghetti, Alberto; Bottura, Riccardo; D'Elia, Alfredo; Di Felice, Marco; Montori, Federico; Napolitano, Fabio; Nucci, Carlo Alberto; Salmon Cinotti, Tullio; Viola, Fabio, An integrated traffic and power grid simulator enabling the assessment of e-mobility impact on the grid: a tool for the implementation of the smart grid/city concept [<https://cris.unibo.it/handle/11585/640489>], «JOURNAL OF ENGINEERING SCIENCES AND INNOVATION», 2016, 1, pp. 73 – 89
- [27]F. Napolitano, F. Tossani, A. Borghetti, C. A. Nucci, M. L. B. Martinez, G. P. Lopes, G. D. J. G. Santos, and D. R. Fagundes, "Lightning performance of a real distribution network with focus on transformer protection", Electr. Power Syst. Res., Jan, 2016.
- [28]F. Napolitano, F. Tossani, C. A. Nucci, and F. Rachidi, "On the Transmission-Line Approach for the Evaluation of LEMP Coupling to Multiconductor Lines", Power Delivery, IEEE Transactions on, vol. 30, issue 2, 2015.
- [29]A. Borghetti, F. Napolitano, C.A. Nucci, "Volt/var optimization of unbalanced distribution feeders via mixed integer linear programming", International Journal of Electrical Power & Energy Systems, vol. 72, pp. 40-47, 2015 ISSN: 01420615 doi:10.1016/j.ijepes.2015.02.009
- [30]A. Necci, G. Antonioni, V. Cozzani, E. Krausmann, A. Borghetti, C.A. Nucci, "Assessment of lightning impact frequency for process equipment", Reliability Engineering & System Safety, vol. 130, pp. 95 – 105, 2014. ISSN: 09518320 doi:10.1016/j.ress.2014.05.001
- [31]Vernon Cooray; Udaya Kumar; Farhad Rachidi; Carlo Alberto Nucci, On the possible variation of the lightning striking distance as assumed in the IEC lightning protection standard as a function of structure height, «ELECTRIC POWER SYSTEMS RESEARCH», 2014, 113, pp. 79 – 87
- [32]F. Napolitano, A. Borghetti, C. A. Nucci, M. L. B. Martinez, G. P. Lopes, and G. J. G. Dos Santos, "Protection against lightning overvoltages in resonant grounded power distribution networks", Electric Power Systems Research, vol. 113, pp. 121-128, 08/2014.

- [33]Necci, A.; Antonioni, G.; Cozzani, V.; Borghetti, A.; Nucci, C.A., Quantification of risk reduction due to the installation of different lightning protection solutions for large atmospheric storage tanks [<https://cris.unibo.it/handle/11585/525428>], «CHEMICAL ENGINEERING TRANSACTIONS», 2014, 36, pp. 481 – 486
- [34]A. Necci, G. Antonioni, V. Cozzani, E. Krausmann, A. Borghetti, and C. A. Nucci, "A model for process equipment damage probability assessment due to lightning", *Reliability Engineering & System Safety*, vol. 115, pp. 91 - 99, 7/2013.
- [35]F. Napolitano, A. Borghetti, D. Messori, C.A. Nucci, M. L. B. Martinez, G. P. Lopes, J. I. L. Uchoa, "Assessment of the lightning performance of compact overhead distribution lines", *IEEE Transactions on Power and Energy*, vol. 133, pp. 987 – 993, 2013. ISSN: 03854213 doi: 10.1541/ieejpes.133.987
- [36]M. Akbari, K. Sheshyekani, A. Pirayesh, F. Rachidi, M. Paolone, A. Borghetti, and C. A. Nucci, "Evaluation of Lightning Electromagnetic Fields and Their Induced Voltages on Overhead Lines Considering the Frequency Dependence of Soil Electrical Parameters", *IEEE Transactions on Electromagnetic Compatibility*, vol. 55, issue 6, pp. 1210 - 1219, 12/2013.
- [37]A. Borghetti, F. Napolitano, C. A. Nucci, and M. Paolone, "Effects of nearby buildings on lightning induced voltages on overhead power distribution lines", *EPSR*, vol. 94: Elsevier B.V., pp. 38–45, 2013.
- [38]F. Napolitano, A. Borghetti, C. A. Nucci, F. Rachidi, and M. Paolone, "Use of the full-wave Finite Element Method for the numerical electromagnetic analysis of LEMP and its coupling to overhead lines", *Electric Power Systems Research*, vol. 94: Elsevier B.V., pp. 24–29, 2013.
- [39]M. Belvedere, B., M. Bianchi, A. Borghetti, C. A. Nucci, M. Paolone, and A. Peretto, "A Microcontroller-Based Power Management System for Standalone Microgrids With Hybrid Power Supply", *Sustainable Energy*, *IEEE Transactions on*, vol. 3, no. 3, pp. 422 -431, july, 2012.
- [40]A. Pagnetti, A. Xemard, F. Paladian and C. A. Nucci, "An Improved Method for the Calculation of the Internal Impedances of Solid and Hollow Conductors With the Inclusion of Proximity Effect," in *IEEE Transactions on Power Delivery*, vol. 27, no. 4, pp. 2063-2072, Oct. 2012, doi: 10.1109/TPWRD.2012.2212466.
- [41]B. Belvedere, M Bianchi, A Borghetti, CA Nucci, M Paolone, A Peretto, "A Microcontroller-Based Power Management System for Standalone Microgrids With Hybrid Power Supply", *IEEE Transactions on Sustainable Energy*, 3 (3), 422-431, 2012.
- [42]F. Napolitano, M. Paolone, A. Borghetti, C.A. Nucci, A. Cristofolini, C. Mazzetti, F. Fiamingo, M. Marzinotto, "Models of Wind-Turbine Main-Shaft Bearings for the Development of Specific Lightning Protection Systems", *IEEE Transactions on Electromagnetic Compatibility*, Vol. 53, No. 1, Page(s): 99 – 107, 2011.
- [43]A. Borghetti, C.A. Nucci, M. Paolone, G. Ciappi, A. Solari, "Synchronized phasors monitoring during the islanding maneuver of an active distribution network". *IEEE Transactions on Smart Grid*. 2(1):82-91, 2011.
- [44]A. Borghetti, M. Bosetti, C. A. Nucci, M. Paolone, A. Abur, Integrated Use of Time-Frequency Wavelet Decompositions for Fault Location in Distribution Networks: Theory and Experimental Validation, «*IEEE Trans. on PWDR* », 2010, 25(4), pp. 3139 – 3146
- [45]A. Borghetti, M. Bosetti, S. Grillo, S. Massucco, C. A. Nucci, M. Paolone, F. Silvestro, Short-Term Scheduling and Control of Active Distribution Systems With High Penetration of Renewable Resources, *IEEE Systems journal*, 2010, 4, pp. 313 – 322
- [46]F. Napolitano, A. Borghetti, M. Paolone and M. Bernardi, Voltage transient measurements in a distribution network correlated with data from lightning location system and from sequence of events recorders, *Electric Power Systems Research*, Vol. 81, No. 2, pp. 237–253 2010.

- [47]A. Borghetti, C.A. Nucci, M. Paolone, "Indirect-Lightning Performance of Overhead Distribution Networks With Complex Topology", IEEE Transactions on Power Delivery, Volume 24, Issue 4, Oct. 2009 Page(s): 2206 – 2213.
- [48]M. Paolone, F. Rachidi, A. Borghetti, C.A. Nucci, M. Rubinstein, V.A. Rakov, M.A. Uman, "Lightning electromagnetic field coupling to overhead lines: theory, numerical simulations, and experimental validation", IEEE Trans. on Electromagnetic Compatibility, Vol. 51, No. 3, pp. 532 - 547, Aug. 2009. ISSN: 0018-9375 doi:10.1109/TEMC.2009.2025958
- [49]J. Schoene, M. A. Uman, V. A. Rakov, J. Jerauld, K. J. Rambo, D. M. Jordan, G. H. Schnetzer, M. Paolone, C.A. Nucci, E. Petrache, F. Rachidi, "Lightning Currents Flowing in the Soil and Entering a Test Power Distribution Line Via Its Grounding", IEEE Transactions on Power Delivery, Vol. 24, No. 3, July 2009, pp. 1095-1103.
- [50]A. Borghetti, A.S. Morched, F. Napolitano, C.A. Nucci, M. Paolone, "Lightning-Induced Overvoltages Transferred Through Distribution Power Transformers", IEEE Trans. on Power Delivery, Vol. 24, No. 1, pp. 360-372, Jan. 2009.
- [51]A. Borghetti, M. Bosetti, M. Di Silvestro, C. A. Nucci, M. Paolone, "Continuous-Wavelet Transform for Fault Location in Distribution Power Networks: Definition of Mother Wavelets Inferred From Fault Originated Transients", IEEE Trans. on Power Systems, Volume 23, Issue 2, May 2008, Page(s):380 – 388.
- [52]P. Kundur, C.A. Nucci, "Study Committee C4 on 'System Technical Performance': Current Activities and Future Plans", Electra, n. 232, June 2007.
- [53]A. Borghetti, M. Bosetti, M. Di Silvestro, C. A. Nucci, M. Paolone, L. Peretto, E. Scala, R. Tinarelli, "Assessment of Fault Location in Power Distribution Networks", Electrical Power Quality and Utilization Journal, Vol. 13, pp. 33 – 41, No. 1-2007.
- [54]N. Theethayi, R. Thottappilli, M. Paolone, C.A. Nucci, F. Rachidi, "External Impedance and Admittance of Buried Horizontal Wires for Transient Studies Using Transmission Line Analysis", IEEE Transactions on Dielectrics and Electrical Insulations, Vol. 14, No. 3, pp. 751-761, June 2007.
- [55]C.A. Nucci, F. Rachidi, M. Rubinstein, "An Overview of Field-to-Transmission Line Interaction", Applied Computational Electromagnetics Society Newsletter, Vol. 22, No. 1, pp. 9-27, March 2007.
- [56]A. Borghetti, C. A. Nucci, M. Paolone, "An Improved Procedure for the Assessment of Overhead Line Indirect Lightning Performance and its Comparison with the IEEE Std. 1410 Method", IEEE Tr. on PWRD, Vol. 22(1), pp. 684 – 692, Jan 2007.
- [57]A. Borghetti, S. Corsi, C.A. Nucci, M. Paolone, L. Peretto, R. Tinarelli, "On the Use of Continuous-Wavelet Transform for Fault Location in Distribution Power Networks", Electrical Power & Energy Systems, Volume 28, Issue 9, pp 608-617, November 2006.
- [58]A. Borghetti, A. Lodi, S. Martello, M. Martignani, C. A. Nucci, A. Trebbi, "An Optimization Problem in the Electricity Market", A Quarterly Journal of Operations Research, Springer Berlin / Heidelberg, pp. 247-259, July 21, 2006.
- [59]C.A. Nucci et al., "Lightning induced voltages on overhead power lines. Part III: Sensitivity Analysis", WG C4.401, Electra, pp. 27-30, October, 2005.
- [60]M. Paolone; Peretto, L.; Sasdelli, R.; Tinarelli, R.; Bernardi, M.; Nucci, C.A., "On the Use of Data From Distributed Measurement Systems for Correlating Voltage Transients to Lightning", IEEE Trans. on Instrumentation and Measurement, pp 1202 - 1208, Volume: 53, Issue 4, August 2004.
- [61]A. Borghetti, C. A. Nucci, M. Paolone, "Estimation of the statistical distributions of lightning current parameters at ground level from the data recorded by instrumented towers", IEEE Transactions on Power Delivery, pp 1400-1409 Volume: 19, Issue: 3 ISSN: 0885-8977, July 2004.

[62]A. Borghetti, J.A. Gutierrez R, C.A. Nucci, M. Paolone, E. Petrache, F. Rachidi, "Lightning-induced voltages on complex distribution systems: models, advanced software tools and experimental validation", *Journal of Electrostatics*, Volume 60, Issues 2-4, March 2004, Pages 163-174.

[63]M. Paolone, C.A. Nucci, E. Petrache, F. Rachidi, "Mitigation of lightning-induced overvoltages in medium voltage distribution lines by means of periodical grounding of shielding wires and of surge arresters: modeling and experimental validation", *IEEE Trans. on PWDR*, 19-1, pp 423-341, 2004.

[64]A. Borghetti, C.A. Nucci, M. Paolone, "Effect of tall instrumented towers on the statistical distributions of lightning current parameters and its influence on the power system lightning performance assessment", *European Transactions on Electrical Power - ETEP*, Vol. 13, No. 6, pp. 365-372, November/December 2003. ISSN: 1430-144X doi: 10.1002/etep.4450130605

[65]A. Borghetti, A. Frangioni, F. Lacalandra, C.A. Nucci, "Lagrangian heuristics based on disaggregated Bundle methods for hydrothermal unit commitment", *IEEE Transactions on Power Systems*, Vol. 18 No. 1, pp. 313 -323, feb. 2003.

[66]F. Rachidi, S.L. Loyka, C.A. Nucci, M. Ianoz, "A new expression for the ground transient resistance matrix elements of multiconductor overhead transmission lines", *Electric Power Systems Research*, 2002.

[67]A. Borghetti, G. Migliavacca, C.A. Nucci, S. Spelta, "The black-startup simulation of a repowered thermoelectric unit", *Proc. IFAC Symposium on Control of Power Plants and Power Systems*, Bruxelles, 26-29 aprile 2000. *Control Engineering Practice*, Vol. 9/7, pp 791-803, July 2001.

[68]C.A. Nucci, S. Guerrieri, M.T. Correia de Barros, F. Rachidi, "Influence of corona on the voltages induced by nearby lightning on overhead distribution lines", *IEEE Trans. on Power Delivery*, Vol. 15, No. 4, pp. 1265-1273, October 2000.

[69]A. Borghetti, R. Caldon, C.A. Nucci, "Generic dynamic load models in long-term voltage stability studies", *Electrical Power & Energy Systems*, 22, pp291-301, 2000.

[70]F. Rachidi, C.A. Nucci, M. Ianoz, "Transient analysis of multiconductor lines above a lossy ground", *IEEE Transactions on Power Delivery*, Vol. 14, No. 1, pp. 294-302, January 1999.

[71]S. Guerrieri, C.A. Nucci, F. Rachidi, M. Rubinstein, "On the influence of elevated strike objects on directly measured and indirectly estimated lightning currents", *IEEE Trans. on Power Delivery*, Vol. 13, No. 4, pp. 1543-1555, Oct. 1998.

[72]F. Rachidi, C.A. Nucci, M. Ianoz, C. Mazzetti, "Response of multiconductor power lines to nearby lightning return stroke electromagnetic fields", *IEEE Trans. on Power Delivery*, Vol. 12, pp. 1404-1411, July 1997.

[73]A. Borghetti, R. Caldon, A. Mari, C.A. Nucci, "On Dynamic Load Models for Voltage Stability Studies", *IEEE Trans. on Power Systems*, Vol. 12, No. 1, pp. 293-303, Febr. 1997.

[74]F. Rachidi, C.A. Nucci, M. Ianoz, C. Mazzetti, "Influence of a lossy ground on lightning-induced voltages on overhead lines", *IEEE Trans. on Electromagnetic Compatibility*, Vol. 38, No. 3, August 1996.

[75]C.A. Nucci, F. Rachidi, "On the contribution of the electromagnetic field components in field-to-transmission line interaction", *IEEE Trans. on Electromagnetic Compatibility*, Vol. 37, no 4, pp. 505-508, November 1995.

[76]A. Borghetti, C.A. Nucci, G. Pasini, S. Pirani, M. Rinaldi, "Tests on self-healing metallized polypropylene capacitors for power applications", *IEEE Trans. on Power delivery*, Vol. 10, No. 1, pp. 556-561, Jan 1995.

[77]C.A. Nucci, F. Rachidi, M. Ianoz, C. Mazzetti, "Comparison of two coupling models for lightning-induced overvoltage calculations", IEEE Trans. on Power Delivery, January 1995.

[78]C.A. Nucci, F. Rachidi, M. Ianoz, C. Mazzetti, "Lightning-induced voltages on overhead power lines", IEEE Trans. on Electromagnetic Compatibility, vol. 35, no 1, Feb. 1993.

[79]C.A. Nucci, S. Pirani, M. Rinaldi, "Pulse withstand capability of self-healing metalized polypropylene capacitors in power applications. An experimental investigation", IEEE Trans. on Electrical Insulation, Vol. EI-26, No. 1, pp. 146-155, Feb. 1991.

[80]C.A. Nucci, F. Tarroni and D. Zanobetti, "Characteristics of dielectric fluids for medium-voltage power capacitors", IEEE Trans. on Electrical Insulation, Vol. EI-20, No. 2, pp. 423-426, April 1985.

Capitoli di libro e monografie

[1]C.A. Nucci, C.A., Borghetti, A., Napolitano, F., Tossani, F., "Basics of Power Systems Analysis", Springer Handbook of Power Systems, Singapore, Springer Nature Singapore Pte Ltd, 2021, pp. 273 - 366 (SPRINGER HANDBOOKS)

[2]A. Borghetti; C. Orozco Corredor; C.A. Nucci; A. Arefi; J.Maleki Delarestaghi; M. Di Somma; G.Graditi, "Impact of neighborhood energy trading and renewable energy communities on the operation and planning of distribution networks", in "Distributed Energy Resources in Local Integrated Energy Systems", pp. 125-174, ISBN, 9780128242148, 2021.

[3]A. Borghetti; Napolitano, F.; Nucci, C., A.; and Tossani, F. Application of the Monte Carlo method to lightning protection and insulation coordination practices. Lightning Interaction with Power Systems - Volume 2: Applications, pages 1-25. Piantini, A., editor(s). Institution of Engineering and Technology, 1 2020.

[4]A. Piantini; Borghetti, A.; and Nucci, C., A. Lightning interaction with medium-voltage overhead power distribution systems. Lightning Interaction with Power Systems - Volume 2: Applications, pages 113-172. Piantini, A., editor(s). Institution of Engineering and Technology, 1 2020.

[5]A. Borghetti; Chisholm, W., A.; Napolitano, F.; Nucci, C., A.; Rachidi, F.; and Tossani, F. Software tools for the lightning performance assessment. Lightning Interaction with Power Systems - Volume 2: Applications, pages 425-452. Piantini, A., editor(s). Institution of Engineering and Technology, 1 2020.

[6]V. Cooray, C.A. Nucci, A. Piantini, F. Rachidi and M. Rubinstein, "Field-to-transmission line coupling models", Chapter 6 of the book, "Lightning interaction with power systems", volume one: fundamentals and modelling", Edited by A. Piantini, IET, 2020.

[7]A. Borghetti, Napolitano, F; Rubinstein, M; F, Rachidi; Nucci, C.A, Telegrapher's equations for field-to-transmission line interaction, in: Advances in Power System Modelling, Control and Stability Analysis, London, UK, Institution of Engineering and Technology, 2016, pp. 1 – 44

[8]A. Borghetti and C. A. Nucci, "Integration of distributed energy resources in distribution power systems," Chapter 2 of Integration of Distributed Energy Resources in Power Systems, T. Funabashi, Ed. Academic Press, 2016, pp. 15-50. ISBN: 978-012803213-8;978-012803212-1 DOI: 10.1016/B978-0-12-803212-1.00002-7

[9]Carlo Alberto Nucci; Farhad Rachidi, Interaction of electromagnetic fields generated by lightning with overhead electrical networks [<https://cris.unibo.it/handle/11585/384376>], in: The Lightning Flash (2nd Edition), London, The Institution of Engineering and Technology, 2014, pp. 559 – 609

[10]Carlo Alberto Nucci; Farhad Rachidi; Marcos Rubinstein, Interaction of lightning-generated electromagnetic fields with overhead and underground cables, in: Lightning Electromagnetics, London, The Institution of Engineering and Technology, 2012, pp. 687 – 718

[11]A. Borghetti, C.A. Nucci and M. Paolone, "Restoration processes after blackout", Handbook of Electrical Power System Dynamics: Modeling, Stability, and Control. Edited by Mircea Eremia and Mohammad Shahidehpour, The Institute of Electrical and Electronics Engineers, Inc. Published 2013 by JohnWiley & Sons, Inc.

[12]C.A. Nucci, F. Rachidi, "Lightning protection of medium voltage lines", Chapter 13 in: Lightning Protection, LONDON, The Institution of Engineering and Technology-IET, 2010, pp. 635 - 680 (IET Power and Energy series 58)

[13]C.A. Nucci, F. Rachidi, M. Rubinstein, "Derivation of telegrapher's equations and field-to-transmission line interaction", Chapter 1 of "Electromagnetic field interaction with transmission lines. From classic theory to HF radiation effects", WIT Press, Southampton, Boston, 2008.

[14]C.A. Nucci, F. Rachidi, "Interaction of electromagnetic fields with electrical networks generated by lightning", Chapter 8 of "The Lightning Flash: Physical and Engineering Aspects", IEE Power and Energy series 34, IEE Press, London, 2003.

[15]A. Borghetti, G. Gross, C.A. Nucci, "Auctions with explicit demand-side bidding in competitive electricity markets". Chapter 5 in the book "The next generation of unit commitment models", (B.F. Hobbs, M. Rothkopf, R.P. O'Neill e H.P. Chao editors), Kluwer Academic Press, Boston, 2001.

[16]C.A. Nucci, C. Mazzetti, "Lightning-induced overvoltages", in "High Voltage Technique" (in Rumanian) edited by G. Dragan, Publisher: Academiei Romane, Bucarest, 2001.

IEEE Standards, CIGRE brochures/guides

[1]A. Piantini, B. Hermoso Alameda, A. Borghetti, A. C. Britten, A. Galvan Diego, T. Funabash, L. Grcev, A. M. Haddad, J. Hoeffelman, M. Ishii, J. McDaniel, J. Michaud, C. A. Nucci, R. G. Olsen, M. Paolone, F. Rachidi, B. Richter, P. E. Munhoz Rojas, A. Rousseau, V. Shostak, W. H. Siew, A. S. Telento, S. Yokoyama, H. Geldenhuys, R. Zeng, "Lightning protection of low-voltage networks", Paris, CIGRE - Int. Council on Large Electric Systems, Technical brochure, No. 550, WG C4.408, 2013, ISBN: 978-2-85873-245-6, pp. 80.

[17]V.A. Rakov, A. Borghetti, C. Bouquegneau, W.A. Chisholm, V. Cooray, K. Cummins, G. Diendorfer, F. Heidler, A. Hussein, M. Ishii, C.A. Nucci, A. Piantini, O. Pinto, Jr., X. Qie, F. Rachidi, M.M.F. Saba, T. Shindo, W. Schulz, R. Thottappillil, S. Visacro, W. Zischank, "Lightning parameters for engineering applications", Paris, CIGRE - Int. Council on Large Electric Systems, No. 549, Technical Brochure, WG C4.407, 2013, ISBN: 978-2-85873-244-9, pp. 117 .

[2]IEEE Working Group on the Lightning Performance of Distribution Lines (incl. C.A. Nucci), "Guide for improving the lightning performance of electric power overhead distribution lines", IEEE Std 1410-2004, PES, New York, January 28, 2011.

[3]CIGRE-CIRED Joint Working Group C4.402 (including C.A. Nucci), "Protection of MV and LV Networks against Lightning. Part I: Common Topics", CIGRE Technical Brochure No 287, December 2005, and "Part II: Lightning protection of Medium Voltage Networks", December 2010.

[4]F. Rachidi, A. Borghetti, T. Britten, J. Cook, A. Galvan Diego, H. Geldenhuys, L. Grcev, A. Haddad, T. Henriksen, B. Hermoso, J. Hoeffelman, M. Ishii, L. Kocis, M. Morgado, J. Mc Daniel, J. Michaud, P. Munoz Rojas, C. A. Nucci, R.G. Olsen, M. Paolone, A. Piantini, B. Richter, A. Sekso, V. Shostak, W.H. Siew, J. Sinclair, H.L. Soibelzon, "Protection of medium voltage and low voltage networks against lightning - part 2: lightning protection of medium voltage networks", Paris, CIGRE - Int. Council on Large Electric Systems, Technical brochure, No. 441, WG C4.402, 2010, ISBN: 978-2-85873-129-9, pp. 38

[5]J. McDaniel, W.A. Chisholm, M.Z. Abidin Ab Kadir, J. Alba, M. Aguado, J. Ainscough, B. Angeli, G. Ardrey, J. Banting, P. Barker, K. Bell, A. Borghetti, J. Bouford, J. Burke, H. Caswell, G. Chapman, P. Chowdhuri, R. Christman, E. Cinieri, J. Cole, M. T. Correia De Barros, A. Chou, K. Cummins, M.

Darveniza, F. C. de la Rosa, C. DeNardo, D. Dobson, F. Doherty, D. Durbak, B. Flier, J. Frasher, K. Frost, D. Gilmer, J. Godfellow, M. M. Gonzalez, T. Grisham, M. Grogan, S. Grzybowski, B. Hermoso, A. Issacs, M. Ishii, C. Janke, G. G. Karaday, M. Khodaie, K. King, F. Lambert, G. Leone, J. A. Martinez-Velasco, K. Matsuda, T. McDermott, K. Meade, R.E. Moore, A. Mousa, D. Nichols, C.A. Nucci, G. Obenchain, M. Paolone, J. Peckingaugh, M. Pehosh, E. Petrache, C. Potvin, F. Rachidi, V. A. Rakov, R. Robinson, T. Rozek, R. Saint, A. Schwalm, D. Schafer, T.A. Short, K. Shortt, J. Smith, R. Soderberg, L.S. Taylor, M. Thatcher, B. Tobin, H. Torres, J. Varner, J. Viglietta, R.A. Walling, D.Y. Wang, D.J. Ward, C.A. Warren, L. Welch, V. Werner, C.W. Williams, J. Williamson, J. Wilson, B. Wood, J.J. Woodworth, D. Yuen, W.N. Zessin, "IEEE Guide for improving the lightning performance of electric power overhead distribution lines" (IEEE Std 1410, 2010), NEW YORK, NY, IEEE, 2010, pp. 63 (IEEE Standards).

[6]F. Rachidi, A. Borghetti, A.C. Britten, J. Cook, A. Galvan Diego, L. Grcev, T. Henriksen, B. Hermoso, J. Hoeffelman, M. Ishii, L. Kocis, P. Martinez Cid, J. Mc Daniel, J. Michaud, P. Munoz Rojas, C. A. Nucci, R.G. Olsen, B. Richter, A. Sekso, W.H. Siew, J. Sinclair, H.L. Soibelzon, "Protection of MV and LV networks against lightning, part I: common topics", Paris: CIGRE - Int. Council on Large Electric Systems, Technical brochure, No. 287, JWG C4.4.02, 2006, pp. 53.

[7]CIGRE Working Group C4.07 (including C.A. Nucci) "Power Quality Indices and Objectives", CIGRE, Technical Brochure No 26, October 2004.

[8]J. S. McDaniel (Chair), M. Aguado, L. Aleman, R. H. Ammon, J. G. Anderson, A. Andreotti, G. Ardrey, P. Barker, K. Bell, E. M. Berckmiller, A. Borghetti, S. Brewer, J. Burke, G. Chapman, W. Chisholm, P. Chowdhuri, E. Cinieri, M. G. Comber, M. T. Correia De Barros, K. Cummins, F. C. De la Rosa, C. Donati, R. Clay Doyle, E. Dziedzic, G. Engmann, D. L. Flaten, M. M. Gonzalez, M. Grogan, S. Grzybowski, S. Harper, R. Hedding, R. W. Hensel, C. Hickman, M. Ishii, K. C. Jaffa, W. Janischewskyj, J. Kappenman, G. G. Karaday, M. Khodaie, J. L. Koepfinger, D. Moreira Leite, V. Longo, D. Maltempo, J. A. Martinez-Velasco, M. Marz, K. Matsuda, T. McDermott, R. E. Moore, R. Newman, D. Nichols, C. A. Nucci, M. Paolone, D. J. Pearson, L. Perez, G. Podporin, F. Rachidi, V. A. Rakov, E. R. Ross Jr., T. J. Rozek, J. M. Santuk, T. Schehade, T. A. Short, K. Shortt, M. H. Shwehdi, L. S. Taylor, C. Tirado, R. A. Walling, D. J. Ward, C. A. Warren, L. Welch, C. W. Williams, J. J. Woodworth, W. N. Zessin, "IEEE Std 1410™-2004 (Revision of IEEE Std 1410-1997) IEEE Guide for improving the lightning performance of electric power overhead distribution lines", 50 pages, ISBN:0-7381-3990-4, IEEE, 2004. ISBN:0-7381-3990-4

Keynote Speech, Tutorial e Invited Lecture

[1]C.A. Nucci, "Smart Cities and Climate Neutrality: the contribution of Renewable Energy Communities", keynote speech (on-line), 2023 International Conference on Power, Energy and Electrical Engineering, February 25-27, 26 febbraio 2023 Tokyo Japan.

[2]C.A. Nucci, "Towards Climate Neutrality and Smart Cities: the Contribution of Energy Communities", Keynote speech (on-line), IEEE SEST 2021.

[3]C.A. Nucci, "Smart Grids for Smart Cities: recent progresses", keynote speech at 25th Electric Power Distribution Network International Conference, Alborz Provence 25-26 August, 2021.

[4]C.A. Nucci, SS8 – "Educating Future Power Engineers", Invited speaker session, IEEE PES PowerTech, Madrid 2021

[5]C.A. Nucci, PL03 – "Successful Publishing in Power Journals", Plenary session, IEEE PES PowerTech, Madrid 2021

[6] C.A. Nucci, "New trends in education, with reference to electrical engineering. Impact of the Covid pandemic.", Invited panelist at 2021 International Forum on Smart Grids for Smart Cities, March 2021.

[7]C.A. Nucci, "Smart Grids and Energy Communities in and for Sustainable Cities", IEEE iSPEC 2020, November 23-25, 2020.

[8]C.A. Nucci, "Smart Grids for Smart Cities", 7th CPESE 2020 – September 26, 2020, Fukuoka, Japan, 2020.

[9]A. Borghetti, F. Napolitano, C.A. Nucci, A. Piantini, F. Tossani, "Influence of Ground Unevenness and of Line Hybrid Configuration on the Lightning Performance of Medium-Voltage Overhead Distribution Systems", invited lecture, XV SIPDA, International Symposium on Lightning Protection 2019.

[10]C.A. Nucci, "Smart grids as enablers for smart cities", Keynote speech, Medpower 2018.

[11]C.A. Nucci, "Lightning Performance of Distribution Lines due to Positive and Negative Indirect Lightning Flashes", invited lecture, The 11th International Symposium on EMC and Transients in Infrastructures and the 13th International Student Session, Kyoto, 21-XII-2017.

[12]C.A. Nucci, "Positive and Negative Flashes: Their Impact on the Lightning Performance of Distribution Systems", Invited lecture, XIV SIPDA, International Symposium on Lightning Protection, 2-6 - X – 2017.

[13]C.A. Nucci, Workshop – IEEE PES Careers & Scholarship Plus in Europe: an important opportunity for students of the Electrical Engineering Programs and for relevant Players. Coordinated by Carlo Alberto Nucci, University of Bologna, Italy, IEEE ISGT, 2017.

[14]C.A. Nucci, "An integrated traffic and power grid simulator enabling the assessment of e-mobility impact on the grid: a tool for the implementation of the smart grid/city concept", IEEE International Forum Smart Grids for Smart Cities, Paris, October 17, 2016.

[15]A. Borghetti, C.A. Nucci, M. Paolone, "Controlled islanding for blackout prevention and restoration processes after blackouts", PSCC 2016 panel on Power System Resilience to Major Disturbance, 19th PSCC, Genova, June 2016.

[16]C.A. Nucci, "Smart Grids for Smart Cities", IEEE Italy Section Schools on Future Energy Systems, Trento, Jan 26-30, 2015.

[17]F. Napolitano, F. Tossani, C.A. Nucci, F. Rachidi, "LEMP Response Of Multiconductor Lines - Focus on shielding and line lossess effect", presented by C.A. Nucci, XXII Sipda, Belo Horizonte, October 7-11, 2013.

[18]C.A. Nucci, "The energy policy and the infrastructures in Italy", (invited panel speech), First Global Resource Management Symposium, Kyoto Doshisha University, March 9, 2013

[19]C.A. Nucci, "Smart grids for Smart Cities. What type of progress in expected", (invited lecture), Italian Cultural Institute in New York, NY city, USA, to be delivered on February 25, 2013.

[20]C.A. Nucci, "Activities of Cigré and of Cigré Study Committee C4 'System Technical Performance' in Modern and Future Power System Development", (invited lecture), Tsinghua University, Beijing – China, Friday July 6th, 2012

[21]C.A. Nucci, P. Southwell, A. Negri, "The role of CIGRE IN Power System Component Efficiency and Energy Delivery Effectiveness for Minimal Environmental Impact", (invited panel speech), IEEE T&D conference, Orlando, May 7-10, 2012.

[22]C.A. Nucci, "The Electric Power Systems Laboratory of the University of Bologna: Recent Activities on Smart Grid Related Issues" (invited seminar), Illinois Institute of Technology, Chicago, february 2012

[23]C.A. Nucci, "The Electric Power Systems Laboratory of the University of Bologna: Recent Activities on Smart Grid Related Issues" (invited seminar), S&C, Chicago, february 2012

- [24]P. Southwell, A. Negri, C.A. Nucci, "Power System Energy Efficiency: a CIGRE Technical Committee Project", (invited keynote speech), IWEC 2011 – Doshisa University, Kyoto – Japan, Monday November 28th, 2011.
- [25]C.A. Nucci, "Transmission Line Electromagnetic Transients with special Reference to the Lightning Performance of Transmission and Distribution Lines", invited course at Univeristy of Sevilla, June 2011.
- [26]C.A. Nucci, "A Survey on Cigré and IEEE Procedures for the Estimation of the Lightning Performance of Overhead Transmission and Distribution Lines", (Invited Keynote Speech), 2010 Asia-Pacific International Symposium on Electromagnetic Compatibility, APECM, Topical meeting on Lightning Protection, Beijing International Convention Center – Tuesday, April 13, 2010.
- [27]C.A. Nucci, "A Two-Stage Scheduler of Distributed Energy Resources" (invited seminar), Tokyo Waseda University, June 2009.
- [28]C.A. Nucci, F. Rachidi, M. Rubinstein, "Lightning-induced voltages: the effect of losses on their amplitude and wave-shape", (Invited Tutorial) "Electromagnetic Field Coupling with Transmission Lines from Classical Theory to Recent Enhancements", Kyoto, Japan, June 5, 2009.
- [29]C.A. Nucci, "Power Systems Technical Performance: Activities within CIGRE", Invited Keynote speech, UPEC 2008 – Palazzo del Bo, Padova, Monday September 1st, 2008.
- [30]C.A. Nucci, "Inferring the Correlation Between Lightning Events and Voltage Dips in Distribution Networks", (Invited lecture), 9th SIPDA, IX International Symposium on Lightning Protection, 26th-30th November 2007 – Foz do Iguacu, Brazil.
- [31]C.A. Nucci, "Lightning Protection of Power Distribution and Transmission Systems - Part 2: Distribution Systems", (Invited Tutorial), International CIGRÉ Symposium 2007, "Transient Phenomena in Large Electric Power Systems", Zagreb, Croatia, April 18-21, 2007.
- [32]R. Koch and C.A. Nucci, "CIGRE Activities in the field of Power Quality", (Invited Keynote address), 12th International Conference on Harmonics and Quality of Power Cascais, Portugal, October 1, 2006.
- [33]C.A. Nucci, "Lightning –Induced Voltages on Distribution Systems: Influence Of Ground Resistivity And System Topology", (Invited lecture), 8th SIPDA, VIII International Symposium on Lightning Protection, 21st-25th, São Paulo, Brazil, November 2005.
- [34]C.A. Nucci, "Effets Induits par la Foudre sur les Réseaux Electriques" - (Invited conference) at « Electricité Future », Supelec, Gif-sur-Yvette, Dec. 9, 2003.
- [35]Borghetti A., C.A. Nucci, M. Paolone, « Effect of tall instrumented towerson the statistical distributions of lightning current parametersand its influence on the power system lightning performance assessment », (Invited lecture), 7th SIPDA, VIII International Symposium on Lightning Protection, Curitiba, Brazil, 17th - 21st November 2003.
- [36]C.A. Nucci, "Modelling of Lightning Return Strokes and of Lightning Induced Effects in View of Overhead Line Protection", (Invited Keynote speech), Proc. 12th Int. Symposium on High Voltage Engineering, Bangalore, India, 20-24 August 2001.
- [37]C.A. Nucci, "Lightning-induced effects on transmission lines", (Invited Tutorial), Proc. 14th Int. Zurich Symposium on Electromagnetic Compatibility, Zurich, February 20-22, 2001.
- [38]C.A. Nucci, "The Lightning Induced Over-Voltage (LIOV) code", (Invited Minitutorial), Proc. Power Engineering Society Winter Meeting 2000. IEEE vol. 4 , pp: 2417 –2418, Jan 2000.
- [39]C.A. Nucci, "Lightning induced voltages on overhead distribution lines (with special reference to low-voltage networks)", (Invited lecture), Proc. 4th Int. Symp. on Lightning Protection, IV SIPDA, University of São Paulo, Brazil, 8 -12 September, 1997.

