



N.I.N.E.
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CURRICULUM VITÆ

Last update: 2015

ALESSANDRO PETRUZZI, PhD

Division: System Thermal
Hydraulics & BEPU
Years of experience: 12
Position: President
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EXPERTISE

- System Thermal/Hydraulics: light water and heavy water
- Licensing Analysis : Preparation and/or Support to SAR
- Development of Uncertainty Methodologies for System Thermal-Hydraulics Evaluation
- Project management
- IAEA Consultant

PROFESSIONAL CAREER

2011 - Present	N.I.N.E. s.r.l. Nuclear Industrial Engineering President of the Board of N.I.N.E.	Lucca, Italy
2003 - 2013	University of Pisa Nuclear Research Group of San Piero a Grado (GRNSPG) Deputy Manager	Pisa, Italy
January 2004 – December 2004	The Pennsylvania State University Internship -research assistant	University Park, Pennsylvania USA

EDUCATION & CERTIFICATES

ASME European Liaison for the Nuclear Engineering Division	since 2011
Professional Engineer	since Dec. 2003
PhD. in Nuclear Engineering University of Pisa - Pisa, Italy	Dec. '08
Thesis title: <i>"Development and Application of Methodologies for Sensitivity Analysis and Uncertainty Evaluation of the Results of the Best Estimate System Codes applied in Nuclear Technology"</i> .	Supervisor: Prof. F. D'Auria, D. Cacuci



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Master in Nuclear Engineering (110/110, cum Laude)

University of Pisa - Pisa, Italy

July '03

Thesis title: *"Extension of the CIAU Methodology for Uncertainty Evaluation in the Results of 3D Neutronics/Thermalhydraulics Coupled Codes"*.

Supervisor: Prof. F. D'Auria

Member of American Nuclear Society (ANS)

since 2003

COMPUTATIONAL TOOLS

- Thermal hydraulics code: **RELAP5** (13 years of experience)
RELAP5-3D© (7 years of experience)
TRACE 5.0 (3 years of experience)
- Neutron Kinetics codes: **PARCS**
- Lattice physics codes: **CASMO**

COMPUTER SKILLS

- CAD Software: Autodesk Autocad
- Numerical computing: **Matlab, Mathcad, MAPLE**
- Programming languages: **FORTRAN, Visual Basic**
- Microsoft Windows, Microsoft Office suite

LANGUAGE SKILLS

Mother tongue: **ITALIAN**

Other languages: **ENGLISH**

Fluent

FRENCH

Intermediate

CONTRACTS AND FINANCED AGREEMENTS

- **Project Director of the agreement between NINE srl and CTMSP/UNIPI (Brazil).** "CRE Coupled Analysis of LABGENE" (2013-2014)
- **Project Director of the agreement between NINE srl and NA-SA (Argentina).** "In Vessel Retention and Containment Venting Analysis" (2013-on going)
- **Project Director of the agreement between NINE srl and University of Pisa.** "Support to the design of the CHF Facility" (2012-2014)
- **Project Director of the agreement between NINE srl and Rolls-Royce (UK).** Course on "VVER Design and Safety Analysis" (2012)

- **Project Director of the agreement between NINE srl and KEPCO E&C (Korea).** “Technical Consultation of the Two-Phase natural Circulation Instability Analysis for Passive Auxiliary Feed Water System”, 4 months contract (2012-2013)
- **Project Director of the agreement between NINE srl and ENEL (Italy).** Course on “Seismic evaluation for VVER-440”, (2013-2014)
- **Project Director of the agreement between NINE srl and CNNC-CNPE (China).** “Developing CNPE expertise in System Thermal-Hydraulics and Severe Accidents”, 8 months contract (2012-2013)
- **President of the Organizing Committee of the ANS NURETH-15,** May 12-16 2013, Pisa, (ITALY). Member of the Technical Program Committee (www.nureth15.org) (2013)
- **Chief Scientific Investigator** (2012-2016) of the IAEA CRP entitled “Benchmark Analysis of an EBR-II Shutdown Heat Removal Test”.
- **Senior expert Consultant** for IAEA for the “Safety Assessment and Training (SAET) program” in the following countries (each one with a minimum of eight missions, each mission corresponding to a one week course):
 - Poland 2010-2011,
 - Malaysia 2012-2017,
 - Vietnam 2012-2015,
 - Jordan (end of) 2012-2017
- III Contract Agreement between GRNSPG-UNIPI and NASA for “Atucha-2 NPP Operation and Safety”. Scientific Manager and Project Director,(2009 – 2013)
- EC-NURISP Project SP4 “Sensitivity and Uncertainty Analysis of Multi-Physics Modules”, Senior expert, (2009 – 2011)
- EC Transition Facility Project No 2006/018-183-03-01 “Support to VATESI in assessment safety of Ignalina NPP - Enhancement of VATESI and its Technical Support Organizations specialists knowledge through seminars and internships” Project Manager,(2009)
- Project director of the GRNSPG-UNIPI/AMEC-NSS Technical Agreement “Modeling of CANDU reactor with the RELAP5 Code”, (2010-2011)
- NPIC (Nuclear Power Institute of China) “VIPRO (Visiting PROgram) Agreement”. Senior expert, 2009
- IE-JRC-EC Project SONIS “Nuclear Operation Safety”, Consultant, 2008
- EC Contract: “Lot 1: Drawing up terms of reference and/or assessing invitations to tender”. Project Manager for GRNSPG, 2007 -2009
- EC Project INTAS: “Full Condensation-Induced Water Hammer in Vertical Vessels”. Coordinator (1 of 3), 2006 – 2007
- Junior Expert in EC NURESIM Project, SP4 T4.2: Sensitivity and Uncertainty Analysis of Multi-Physics Modules, 2005 – 2007
- EC TACIS Project (2004-2006): “Software Development for Accident Analysis of VVER and RBMK Reactors”. Junior expert, 2005 – 2006
- Research Services between VUJE (Slovak Republic) and University of Pisa, No 4803/08/04: “Qualification and Uncertainty Evaluation of a Best Estimate LOCA study of the Mochovce NPP by RELAP5/3.2-gamma”. Junior expert, 2004

- US DOE NEER Grant NO. 03ID14497: "Development of a methodology to early predict BWR instabilities". Junior expert, 2004
- US NRC Contract # NRC-04-03-048 (PURDUE Subcontract): "Assessment of the Coupled TRACE/PARCS System Code against the RINGHALS Stability Data". Junior expert, 2004

SCIENTIFIC ACTIVITIES CARRIED OUT

- 2000 Analysis of single-phase natural circulation stability in a rectangular-loop by Relap5.
- 2001 Analysis of the fuel assembly of the IRIS 1000 MWth reactor by CASMO Code.
- 2001–2002 Participation to the OECD/CSNI ISP-42 (PANDA Facility at Paul Scherrer Institute). Containment analysis performed by Relap5 code for the Phases A, B and C.
- 2001–2003 Development of CIAU-TN Code for internally evaluate the results of 3D Neutron-Kinetics/Thermal-Hydraulics coupled code calculations.
- 2003-2007 Enlargement of the CIAU Uncertainty Database. Filling process of the uncertainty matrixes by new experimental tests calculated by RELAP5 code. The following test have been analyzed: a) LOFT LBLOCA L2-5 e L2-3; b) BETHSY SBLOCA 6.2tc e 9.1b; c) LOBI SBLOCA BL06 e A-81; d) LOBI LBLOCA AI66; e) PMK SBLOCA SPE-4; f) PSB, Test No. 2 Total LOFW.
- 2003-2009 Participation to the OECD/CSNI/NEA BEMUSE (Best Estimate Methods Uncertainty and Sensitivity Evaluation) Programme
- Phase I: "Presentation of the Uncertainty Methodologies to be applied", 2003;
 - Phase II: "Re-Analysis of the ISP-13 Exercise, Post Test Analysis of the LOFT L2-5 Test Calculation" (scientific coordinator), 2004-2005;
 - Phase III: "Uncertainty and Sensitivity Analysis of the LOFT L2-5 Test", 2006;
 - Phase IV: "Simulation of a Large Break Loss Of Coolant Accident in ZION Nuclear Power Plant", 2006-2007.
 - Phase V: "Uncertainty and Sensitivity Analysis of the ZION NPP LBLOCA", 2007-2008
 - Phase VI: "Conclusions and Lessons Learnt", 2008-2009.
- 2004 Assessment of the Coupled TRACE/PARCS System Code against the RINGHALS Stability Data (US NRC Contract # NRC-04-03-048). Development of 3D nodalization techniques and methodologies to predict both in-phase (global) and out-of-phase (regional) instability events.
- 2004 Development of a new Methodology for Early Anomaly Detection of BWR Instabilities (US DOE NEER Grant NO. 03ID14497). Development of a methodology to early predict BWR instabilities through the use of a) the US NRC Coupled Code TRACE/PARCS, b) the Transient Modal Analysis of BWR Instability events, c) the concept of Symbolic Dynamics and of State Machines to quantify the Anomaly Measure.
- 2004 Junior Expert in the project "Qualification and Uncertainty Evaluation of a Best Estimate LOCA study of the Mochovce NPP by RELAP5/3.2-gamma". Agreement for Research Services between VUJE (Slovak Republic) and University of Pisa, No 4803/08/04.
- 2004-2006 Development and application of procedures for the internal qualification of the CIAU uncertainty database.

- 2005-2006 Junior Expert in the TACIS Project (2004-2006) "Software Development for Accident Analysis of VVER and RBMK Reactors". Involved Russian partners are NIKIET/Minatom, Kurchatov, Hidropress, EREC, Rosenergoatom and Gosatomnadzor. The design of AM procedure in VVER-1000 and the set-up of a comprehensive chain of codes for accident analysis in RBMK constituted the subject of the 4 MEURO Project funded by EC.
- 2005-2009 Participation to the OECD/NRC/NUPEC BFBT Benchmark based on NUPEC BWR. Subchannel Analysis with RELAP5 3D ©. Validation against experimental data.
- 2005-2007 Junior Expert in EC NURESIM Project, SP4 T4.2: Sensitivity and Uncertainty Analysis of Multi-Physics Modules.
- 2006-2009 Senior Expert in IAEA CRP (CRP = Coordinated Research Program) "Investigation of Uncertainties in Best Estimate Accident Analysis".
- 2006-2008 Development of the CASUALIDAD (Code with the capability of Adjoint Sensitivity and Uncertainty AnaLysis by Internal Data ADjustment and assimilation) methodology based on advanced mathematical tools for performing the sensitivity and the uncertainty analyses internally to a thermal-hydraulic system code. The method is fully deterministic and allows through the availability of experimental results and the use of the Bayesian approach, implemented in a Data Adjustment and Assimilation tool, the improvement of the responses and the reduction of the related covariance values.
- 2007-2009 Senior Expert in the Project "Atucha-II Platform for Thermal-Hydraulic Design Issues and Deterministic Safety Technology" (contract with NA-SA, Nuclear Utility in Argentina). The scope for the platform is constituted by the thermal-hydraulic design and safety environment connected with the construction and the licensing of the Atucha-II NPP.
- 2008 IAEA Expert Consultant in relation to: "Development of background material for the TM on Deterministic Safety Analyses" in December 2008.
- 2008-2009 Senior Expert of the GRNSPG-UNIPI/AMEC-NSS Technical Agreement "Modeling of CANDU reactor with the RELAP5 Code" (12 months project). The scope of the agreement is to develop a RELAP5 model of the Darlington Nuclear Power Station.
- 2009-2011 Senior Expert in EC NURISP Project (SP4: Sensitivity and Uncertainty Analysis of Multi-Physics Modules).
- 2010-2013 Scientific Manager of the III Contract Agreement between GRNSPG-UNIPI and NASA for "Atucha-2 NPP Operation and Safety".
- 2010 Expert Consultant for IAEA for the "Safety Assessment and Training (SAET) program" in the following countries (each one with a minimum of eight missions, each mission corresponding to a one week course):
- Poland 2010-2011,
 - Malaysia 2012-2013,
 - Vietnam 2012-2013,
 - Jordan (end of) 2012-2014,
 - Algeria 2013-2014.
- 2012 Development of the FFTBM software for evaluating the range of input uncertainty parameters (in the framework of the OECD/NEA benchmark, PREMIUM)

2012 Chief Scientific Investigator (2012-2016) of the IAEA CRP entitled “benchmark Analysis of an EBR-II Shutdown Heat Removal Test”.

APPOINTED LECTURER

- **Director and lecturer of the 3D S.UN.COP Course “Scaling, Uncertainty and coupled 3D Neutron-Kinetics/Thermal-Hydraulics” held at:**
 - a) University of Pisa, Pisa (Italy), Jan. 05 – 09, 2004,
 - b) Pennsylvania University, State College (PA, US), May 23 – 27, 2004,
 - c) University of Pisa, Pisa (Italy), June 14 – 19, 2004,
 - d) University of Zagreb, Zagreb (Croatia), June 20 – July 8, 2005,
 - e) Technical University of Catalonia (UPC), Barcelona (Spain), Jan. 23 – Feb. 10, 2006,
 - f) Autoridad Regulatoria Nuclear (ARN), Buenos Aires (Argentina), Oct. 2 – 13, 2006;
 - g) Texas A&M University, College Station (TX, US), Jan. 22 – Feb. 9, 2007;
 - h) McMaster University (Hamilton, Canada), October 8 – 26, 2007;
 - i) Institute of Energy, Joint Research Center of EC (Petten, The Netherlands), Oct. 13 – 31, 2008.
 - j) Royal Institute of Technology, Stockholm, Sweden, October 12 – 30, 2009.
 - l) Institute of Energy, Joint Research Center of EC (Petten, The Netherlands), Oct. 18 – Nov. 5, 2010.
 - m) GEH, (Wilmington, NC, USA), March 28 – April 8, 2011.
 - n) KAERI (Daejeon, South Korea), April 16 – May 4, 2012.
- **RELAP5 (US NRC Version) Code Instructor in 3D S.UN.COP Course “Scaling, Uncertainty and coupled 3D Neutron-Kinetics/Thermal-Hydraulics” and NRS HOT “Nuclear Reactor Safety Hands-On Training” held at:**
 - a) University of Zagreb, Zagreb (Croatia), June 20 – July 8, 2005,
 - b) Technical University of Catalonia (UPC), Barcelona (Spain), Jan. 23 – Feb. 10, 2006,
 - c) Autoridad Regulatoria Nuclear (ARN), Buenos Aires (Argentina), Oct. 2 – 13, 2006;
 - d) Texas A&M University, College Station (TX, US), Jan. 22 – Feb. 9, 2007
 - e) McMaster University (Hamilton, Canada), October 8 – 26, 2007
 - f) Institute of Energy, Joint Research Center of EC (Petten, The Netherlands), October 13 – 31, 2008
 - i) Royal Institute of Technology, Stockholm, Sweden, October 12 – 30, 2009
 - j) Institute of Energy, Joint Research Center of EC (Petten, The Netherlands), June 28 – July 2, 2010.
 - l) Institute of Energy, Joint Research Center of EC (Petten, The Netherlands), Oct. 18 – Nov. 5, 2010
 - m) GEH, (Wilmington, NC, USA), March 28 – April 8, 2011
 - n) Royal Institute of Technology, Stockholm, Sweden, July 4 – 8, 2010
 - o) KAERI (Daejeon, South Korea), April 16 – May 4, 2012
- **Invited lecturer in seminars with main subject: “Uncertainty analysis in thermal-hydraulic system code” held in:**
 - a) Forschungszentrum Karlsruhe (Karlsruhe, Germany) in 2003
 - b) Shanghai-Jiao-Tong University in Shanghai (Shanghai, China) in 2006
 - c) CEA (Grenoble, France), March 2007
 - d) Japan Nuclear Technology Institute (Tokyo, Japan), April 2007
 - e) Westinghouse (Pittsburgh, USA), October 2007
 - f) NPIC (Chengdu, China), July 2008

- g) RELAP/SCDAP Course (Pisa, Italy), April 2008
- h) CoNuSS2008 (Belgrade, Serbia), September 23, 2008
- i) INSS *“International Symposium on Thermal-Hydraulic Analyses for Light Water Reactors”*, 2 Oct. 2009, Tsuruga City, Japan
- l) NURETH-14: *“BEPU Method, CSAU and Statistical Methods”*, September 25-30, 2011, Toronto Canada
- m) Roll-Royce: *“Uncertainty and Safety analysis”*, Derby, UK, Nov 2011
- Lecturer and code instructor (RELAP5&TRACE5 code) *“International Training program: Nuclear Reactor Simulation Hands-on-Training”*, 25-29 June, 2012, Budapest, Hungary
- F. Fiori, A. Petruzzi, *“Collection of Plant Data, Engineering Handbook and Connection with the Input”*, Training Course on *“Design and Safety in Thermal Hydraulic Analysis: From Fundamentals to Code Application”*, 15-18 November 2011, Pisa, Italy
- Lecturer and code instructor (RELAP5&TRACE5 code) *“International Training program: Nuclear Reactor Simulation Hands-on-Training”*, 11-15 July, 2011, Stockholm, Sweden
- Petruzzi, F. Fiori, *“Code and User Qualification Issues”*, IAEA Fellowship Program *“Fundamentals of Deterministic Safety Analysis in nuclear Reactor Technology”*, 18-22 April 2011, Pisa, Italy

INTERNATIONAL PROJECTS

- **Scientific Manager** of the III Contract Agreement between GRNSPG-UNIPI and NASA for *“Atucha-2 NPP Operation and Safety”*, 2009 -2013
- Senior Expert in EC NURISP Project (*SP4: Sensitivity and Uncertainty Analysis of Multi-Physics Modules*), 2009-2011
- Project Manager of FONESYS, 2010 - 2012
- Project Manager, EC Transition Facility Project No 2006/018-183-03-01 *“Support to VATESI in assessment safety of Ignalina NPP*, 2009
- **IAEA Senior Expert Consultant** in relation to: *“Development of background material for the TM on Deterministic Safety Analyses”*, December 2008
- Senior Expert in the Project *“Atucha-II Platform for Thermal-Hydraulic Design Issues and Deterministic Safety Technology”* (contract with NA-SA, Nuclear Utility in Argentina), 2007 - 2009
- Senior Expert in IAEA CRP (CRP = Coordinated Research Program) *“Investigation of Uncertainties in Best Estimate Accident Analysis”*, 2006 -2009
- Coordinator of EC Project INTAS: *“Full Condensation-Induced Water Hammer in Vertical Vessels”*, 2006 - 2007
- Participation to the OECD/NRC/NUPEC BFBT Benchmark based on NUPEC BWR. *Subchannel Analysis with RELAP5 3D @. Validation against experimental data*, 2005 - 2009
- Junior expert in the TACIS Project (2004-2006) *“Software Development for Accident Analysis of VVER and RBMK Reactors”*. *Involved Russian partners are NIKIET/Minatom, Kurchatov, Gidropress, EREC, Rosenergoatom and Gosatomnadzor*, 2005-2006

- Junior expert in the project “Qualification and Uncertainty Evaluation of a Best Estimate LOCA study of the Mochovce NPP by RELAP5/3.2-gamma”. Agreement for Research Services between VUJE (Slovak Republic) and University of Pisa, No 4803/08/04
- Junior expert: Development of a new Methodology for Early Anomaly Detection of BWR Instabilities (US DOE NEER Grant No. 03ID14497), 2004
- Junior expert: Assessment of the Coupled TRACE/PARCS System Code against the RINGHALS Stability Data (US NRC Contract # NRC-04-03-048), 2004
- Participation to the OECD/CSNI/NEA BEMUSE (Best Estimate Methods Uncertainty and Sensitivity Evaluation) Programme, 2003 – 2009

INTERNATIONAL CONFERENCES & PUBLICATIONS

- President of the Organizing Committee of the ANS NURETH-15, May 12-16 2013, Pisa, (ITALY). Member of the Technical Program Committee (www.nureth15.org).
- Organizer of a “Special Session on International Programs & Cooperation” for ICONE-13 Conference, May 16-20, 2006, Beijing, China.
- Track Co-Organizer in ASME PVP (2011), NURETH-14 (2011) and ASME ICONE-20 (2012) Conference.
- Coordinator of the Editorial Staff at the University of Pisa of the J. Science & Technology of Nuclear Installations (Hindawi Publisher) established at the end of 2006 (first issue in 2007).
- Conference session chair
 - ICONE-13 (2005), ICONE-14 (2006), ICONE-15 (2007), ICONE-19 (2011), ICONE-20 (2012)
 - ASME PVP (2011),
 - NURETH 13 (2009), NURETH 14 (2011)

Guest Editor of Special Issues

- “Scaling Uncertainty and 3D Coupled Code Calculations in Nuclear Technology”, J. Science & Technology of Nuclear Installations (Hindawi Publisher); Guest editors: C. Frepoli (Westinghouse, USA), A. Petruzzi (GRNSPG, Italy); September 2008.
- “ENS TOPSAFE2008: Safety at Nuclear Installations”, J. Science & Technology of Nuclear Installations (Hindawi Publisher); Guest editors: M. Giot (Université Catholique de Louvain, Belgium), N. Cavlina (University of Zagreb, Croatia), D. Pevec (University of Zagreb, Croatia), A. Petruzzi (GRNSPG, Italy);
- “OECD/NEA PSBT Benchmark”, J. Science & Technology of Nuclear Installations (Hindawi Publisher); Guest editors: A. Manera (U. Michigan, USA), M. Avramova (PSU, USA), D. Novog (McMaster, Canada), D. Cuervo (U. Madrid, Spain), A. Petruzzi (GRNSPG, Italy); April 2012.

Reviewer of papers submitted to International Journal

- NED, Nuclear Engineering and Design
- Nuclear Technology
- Science and Technology of Nuclear Installations
- Annals of Nuclear Energy

International Journal

- NUREG/IA-0247: *"RELAP5 Simulation of Darlington Nuclear Generating Station Loss of Flow Event"*, US NRC, February 2011, Washington, 2011.
- K. H. Leung, A. Kovtonyuk, A. Petruzzi, F. D'Auria, D. R. Novog, *"RELAP5-3D Analysis of the BFBT Benchmark"*, Nuclear Design and Technology
- A. Bucalossi, A. Petruzzi, M. Kristof, *"Comparisons between Best Estimate Plus Uncertainty Methods and Conservative Tools for Nuclear Power Plant Licensing"*, Nuclear Technology, 172, 1, 29-47 (2010).
- A. Bucalossi, A. Petruzzi, *"Role of Best Estimate Plus Uncertainty Methods in Major Nuclear Power Plant Modifications"*, Journal of Nuclear Science and Technology, 47, 8, 671-683 (2010).
- A. Petruzzi, D. G. Cacuci, F. D'auria, *"Best-Estimate Model Calibration and Prediction through Experimental Data Assimilation: II. Application to a Blowdown Benchmark Experiment"*, Nuclear Science and Engineering, 165, 45-100 (2010).
- M. Perez, F. Reventos, L. Batet, R. Pericas, I. Toth, P. Bazin, A. de Crécy, P. Germain, S. Borisov, H. Glaeser, T. Skorek, J. Joucla, P. Probst, A. Ui, B. Chung, D.-Y. Oh, M. Kyncl, R. Pernica, A. Manera, F. D'Auria, A. Petruzzi, A. Del Nevo, *"Main results of Phase IV BEMUSE project. Simulation of LBLOCA in a NPP"*, Science and Technology of Nuclear Installations, Vol. 2010 (2010), ID 219294.
- A. Petruzzi, F. D'auria, *"Evaluation of uncertainties in system thermal-hydraulic calculations and key applications by the CIAU method"*, Int. J. Nuclear Energy Science and Technology, 4, issue 2, 2008, pp111-131
- Lombardi Costa A., Petruzzi A., D'Auria F., Ambrosini W., *"Analyses of Instability Events in the Peach Bottom-2 BWR Using Thermal-Hydraulic and 3D Neutron Kinetic Coupled Codes Technique"*, J. Science and Technology of Nuclear Installations, 2008, Art. ID 423175, pp 16.
- Krištof M., Kliment T., Petruzzi A, *"RELAP5 Simulation of Surge Line Break Accident using Combined and Best Estimate plus Uncertainty Approaches"*, J. Science and Technology of Nuclear Installations, 239 (2009), pp 2500-2513
- Petruzzi A., D'Auria F., *"Evaluation of uncertainties in system thermal-hydraulic calculations and key applications by the CIAU method"*, International Journal of Nuclear Energy Science and Technology, 4(2), 111-131 (2008)
- De Crécy A., Bazin P., Petruzzi A. et al. *"Uncertainty and Sensitivity Analysis of the LOFT L2-5 Test: Results of the BEMUSE Programme"*, Nuclear Engineering and Design, 238 (12), 3561-3578 (2008)
- Petruzzi A., D'Auria F., Bajs T., Reventos F., Hassan Y., *"International Course to Support Nuclear Licensing by User Training in the Areas of Scaling, Uncertainty, and 3D Thermal-Hydraulics/Neutron-Kinetics Coupled Codes: 3D S.UN.COP Seminars"*, J. Science and Technology of Nuclear Installations, 2008, Article ID 874023. pp 16.
- Petruzzi A., D'Auria F., *"Thermal-Hydraulic System Codes in Nuclear Reactor Safety and Qualification Procedures"*, J. Science and Technology of Nuclear Installations, 2008, Art. ID 460795, pp. 16.
- Petruzzi A., D'Auria F., *"Approaches, Relevant Topics, and Internal Method for Uncertainty Evaluation in Predictions of Thermal- Hydraulic System Codes"*, J. Science and Technology of Nuclear Installations, (2008), Art. ID 325071, pp 17.
- D'Auria F., Salah A.B., Petruzzi A., Del Nevo A., *"State of the Art in Using Best Estimate Calculation Tools in Nuclear Technology"*, Nuclear Engineering and Technology, 38, 1, 11-32 (2006).

- Salah A.B., Kliem S., Rohdeb U., D'Auria F., Petruzzi A., "Uncertainty and sensitivity analyses of the Kozloduy pump trip test using coupled Thermal-Hydraulic 3D Kinetics Code", Nuclear Engineering and Design, 236 (2006) 1240–1255.
- Petruzzi A., D'auria F., Giannotti W., Ivanov K., "Methodology of Internal Assessment of Uncertainty and Extension to Neutron-Kinetics/Thermal-Hydraulics Coupled Codes", Nuclear Science and Engineering, 149, 1-26 (2005)
- Petruzzi A., D'auria F., Galassi G.M., "Analysis of OECD/CSNI ISP-42 PANDA Experiment by Relap5/Mod3.2.2 Code", J. Kerntechnik, 67, 242-251 (2002).

Books, Part of Books, Chapter in Books

- C. Camargo, A. Petruzzi, M. Kristof: "NPP Design Technical Evaluation", NA.SA, Argentina, pp 650, April 2010.
- A. Petruzzi, N. Muellner, C. Parisi, F. D'Auria: "BEPU Approach in Licensing Framework, including 3D NK Applications", InTech, ISBN: 978-953-307-212-8, November 2010.
- IAEA (Co-author, 1 of 10): "Deterministic Safety Analysis for Nuclear Power Plants", Specific Safety Guide SSG-2, Vienna, 2009.
- OECD/NEA/CSNI (author 1 of 19): "BEMUSE PHASE V REPORT: Uncertainty and Sensitivity Analysis of the LBLOCA in ZION Nuclear Power Plant", 2009, Paris (France)
- GRNSPG-UNIPI & NA.SA (Author 1 of 17): "DEGB LBLOCA (2 X 100% Break in CL) in Atucha-2 NPP", pp 259, 2008.
- OECD/NEA/CSNI (author 1 of 19): "BEMUSE Phase IV Report: Simulation of a LBLOCA in ZION Nuclear Power Plant", pp 351, September 2008
- GRNSPG-UNIPI & OECD/NEA/CSNI (Editor 1 of 3): "OECD/NEA/CSNI Competence, Knowledge and Experience Gained through CSNI Activities in the Field of Thermal-hydraulics", pp 504, May 2008.
- EC Editor (Contributing Author): Annex 5 in "TACIS Part A (VVER1000) Final Technical Report: Software Development for Accident Analysis of VVER and RBMK Reactors in Russia", II, pp 1137-1155, June 2006.
- EC Editor (Contributing Author): Chapter 4.5 in "TACIS Part A (VVER1000) Final Technical Report Software Development for Accident Analysis of VVER and RBMK Reactors in Russia", I, pp 203-254, June 2006.
- OECD/NEA/CSNI (author 1 of 18): "BEMUSE PHASE III-REPORT: Uncertainty and Sensitivity Analysis of the LOFT L2-5 Test", OECD/NEA/CSNI, pp 200, August 2006.
- OECD/NEA/CSNI editor (lead author, 1 of 2): "BEMUSE PHASE II REPORT: Re-Analysis of the ISP-13 Exercise, Post Test Analysis of the LOFT L2-5 Test Calculation", OECD/CSNI Report NEA/CSNI/R(2006)2 – Issued June 19, 2006, JT03210882, Paris (F), © OECD 2006, pp 625.
- OECD/NEA/CSNI editor (lead author, 1 of 2): "Input and Output Specifications for the LOFT L2-5 Experiment", Appendix A in report NEA/CSNI/RI(2006)/2, pp 107, May 2006.
- OECD/NEA/CSNI editor (author 1 of 18): "BEMUSE PHASE I-REPORT: Presentation a priori of the uncertainty evaluation methodology to be used by the participants", pp 250, February 2005.

International Congress and Meetings with Proceedings

- Petruzzi A., D'Auria F., *"Advancements in CIAU Methodology"*, The 13th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-13), Kanazawa City, Ishikawa Prefecture, Japan, September 27-October 2, 2009.
- Petruzzi A., Cacuci D. G., D'Auria F., *"Deterministic Sensitivity and Uncertainty Methodology for Best Estimate System Codes applied in Nuclear Technology"*, The 13th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-13), Kanazawa City, Ishikawa Prefecture, Japan, September 27-October 2, 2009.
- K. Leung, A. Kovtonyuk, Petruzzi A., D'Auria F., Novog, D. R., *"Prediction of Void Fraction Uncertainty Bands In Bwr Fuel Bundles Using The CiaU Methodology"*, International Conference on Mathematics, Computational Methods & Reactor Physics (M&C 2009), Saratoga Springs, New York, May 3-7, 2009, on CD-ROM, American Nuclear Society, LaGrange Park, IL (2009).
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