

**XXIII ENFIR ORAL TECHNICAL SESSIONS****MAY 8, WEDNESDAY****Auditorium Salão de Jogos B****R02 - Nuclear Reactor Thermal Hydraulics, Reactor Safety Analysis, Nuclear Reactor Licensing and Regulation**

Time	Paper ID	Title / Authors
15:45 - 16:00	R02_ 23877	Improving the Technical Management of Nuclear Licensing Processes in Brazil: the Applicant's Role <i>Claudia Giovedi, Nelson Ferreira, Alfredo Abe</i>
16:00 - 16:15	R02_ 24028	Proposal for Safety Classification of SSC for Land Facilities Supporting Nuclear-Powered Submarines <i>Douglas Brandão Baroni, Helio Massaharu Murata, Fagner Chagas Rother, Anelise Ruzzarin, William Henrique Silva Profeta, Sad Sandrini Borsoi, Eduardo Ascenso Reis Ribeiro, Luana Soares Jorge</i>
16:15 - 16:30	R02_ 24042	Proposal for a Methodology for Unified Selection of Initiating Events for Safety Analysis of Nuclear Reactors <i>Roberto Pereira de Oliveira, Vitor Silveira Medeiros, Pedro Julio Batista de Oliveira Nishiyama</i>

**Sala de Seminário 1A****R02 - Nuclear Reactor Thermal Hydraulics, Reactor Safety Analysis, Nuclear Reactor Licensing and Regulation**

Time	Paper ID	Title / Authors
15:45 - 16:00	R02_ 23851	Thermal-hydraulic Model of the Hottest Fuel Assembly from the SMART Small Modular Reactor. <i>Cristian Oliveira, Dario Martin Godino, Alirio Johan Sarache Piña, Ivan Keiti Umezu, Clarysson Albeto Mello da Silva, Antonella Lombardi Costa, Bruno Vioti Melo</i>
16:00 - 16:15	R02_ 23735	Analysis of Supercritical Fluid Blowdown <i>Fabián Mena de la Noval, Thiago Daboit Roberto, Mário Augusto Bezerra da Silva, Celso Marcelo Franklin Lapa, Carlos Alberto Brayner de Oliveira Lira</i>
16:15 - 16:30	R02_ 23718	Improvements and Safety Analysis on the Technologies of Current Nuclear Power Systems for Remote Places and Outer Space <i>Julio Oliveira Junior, Dmitry Sergeevich Samokhin</i>

**MAY 08 WEDNESDAY****Auditorium Salão de Jogos B****R02 - Nuclear Reactor Thermal Hydraulics, Reactor Safety Analysis, Nuclear Reactor Licensing and Regulation**

Time	Paper ID	Title / Authors
17:00 - 17:15	R02_ 23918	Quantifying Uncertainty in Nuclear Safety Assessments: Comparing Methods and Looking Into Future Directions <i>Henrique Andrade de Aquino, Nathália Nunes Araújo, Pedro Paludetto Silva de Paula Lopes, Marcos Coelho Maturana, Marcelo Ramos Martins</i>
17:15 - 17:30	R02_ 24167	A MECHANISTIC MODEL FOR ANNULAR FLOW AND HEAT TRANSFER IN A ROD BUNDLE. <i>Mayara Francisca Reis de Souza, Celso Garnica Mota, Su Jian</i>
17:30 - 17:45	R02_ 24079	Thermal-hydraulic Modeling of a Small Modular Reactor Core Using RELAP5 <i>Bruno Viotti de Melo, Antonella Lombardi Costa, Cristian Oliveira, Clarysson Albeto Mello da Silva, Lucas Patric Cardoso Leão, Gustavo Luiz Araújo Ribeiro</i>

**R01 - Nuclear Reactor Physics, Advanced Nuclear Reactors**

**17:45 - 18:00** R01\_ 23949 Neutronic Evaluation of a SMR using the MCNP and SERPENT Codes  
*Natália Gonçalves Peixoto Lelis Oliveira, Maria Lorduy-Alós, Sergio Gallardo, Carlos Eduardo Velasquez, Clarysson Alberto Mello da Silva, Gumersindo Verdu, Cláudia Pereira*

**18:00 - 18:15** R01\_ 23950 High order asymptotic expressions for the Doppler Broadening Function  
*Guilherme Guedes De Almeida, Alexandre José Miranda Antunes, Daniel Artur Pinheiro Palma*

### **R06 - Nuclear Power Plant Viability, Design, Construction and Operation, Environmental Impact Applied to Nuclear Reactors and Fuel Cycle**

**18:15 - 18:30** R06\_ 24236 Brief Historical Review of the RTG, its Application to Space Exploration and the Shortage of Fuel Material in the last 20 years  
*Lamartine N. F. Guimaraes, Ana Paula Rodrigues dos Santos, Charles Henrique dos Montes Fernandes e Fernandes*

### **R03 - Applied Mathematics and Computation, Computational Fluid Dynamics**

**18:30 - 18:45** R03\_ 24084 The use of porous zones to simulate the hydraulic behavior of fuel elements in a Small Modular Reactor model  
*Rebeca Cabral Gonçalves, Geovana Carvalho Silva, Fernando Lage Araújo Schweizer, Pedro Andrade Maia Vinhas, Vitor Vasconcelos Araújo Silva, Graiciany de Paula Barros, Andre Augusto Campagnole dos Santos*

### **R04 - Artificial Intelligence and Virtual Reality, Nuclear Reactor Instrumentation and Control, Man Machine Interface**

**18:45 - 19:00** R04\_ 24095 Power Distribution Reconstruction from Incore Detector Measurements using Gaussian Process Regression for the Angra 1 Reactor  
*Artur Silva, William Vieira de Abreu, João Domingos Talon, Adilson Costa da Silva, Aquilino Senra Martinez, Alessandro da Cruz Gonçalves*

## **Sala de Seminário 1A**

### **R01 - Nuclear Reactor Physics, Advanced Nuclear Reactors**

<b>Time</b>	<b>Paper ID</b>	<b>Title / Authors</b>
<b>17:00 - 17:15</b>	R01_ 24196	Previous analysis of fuels with transuranic inserted into the hybrid fusion-fission ARC reactor <i>Natália Gonçalves, Cláudia Pereira, Carlos E. Velasquez</i>
<b>17:15 - 17:30</b>	R01_ 23803	Study of the Neutron Transport Equation in Molten Salt Small Modular Reactors <i>Empar Gamón, Antoni Vidal-Ferrándiz, Gumersindo Jesús Verdú Martín</i>
<b>17:30 - 17:45</b>	R01_ 24163	Study on Parameters of ADS Spallation Targets for Actinides Transmutation <i>José José Cassimiro da Silva, Natália Gonçalves Peixoto Lelis Oliveira, Karytha Merie Silva Corrêa, Carlos Eduardo Velasquez Cabrera, Cláudia Pereira Bezerra Lima</i>
<b>17:45 - 18:00</b>	R01_ 23934	Concept analysis of a fast modular reactor using a core with moving parts <i>Arthur Reis Martins, João Manoel Losada Moreira, Pedro Carlos Russo Rossi, Pedro Henrique Silva Rodrigues</i>
<b>18:00 - 18:15</b>	R01_ 23736	Analysis of the multiplicative properties of burnup in the High-Performance Light Water Reactor <i>Fabián Mena de la Noval, Leorlen Yunier Rojas Mazaira, Carlos Rafael García Hernandez, Dany Sanchez Dominguez, Mário Augusto Bezerra da Silva, Carlos Alberto Brayner de Oliveira Lira</i>
<b>18:15 - 18:30</b>	R01_ 23962	The Use of a Heat-Conducting Liquid Metal Sublayer in Fuel Rods for Nuclear Reactors <i>Leonardo Paredes Pires, Aleksander Borisovich Kruglov</i>
<b>18:30 - 18:45</b>	R01_ 23959	Steady-State Neutronic Assessment of a Micro Reactor Based on NASA's Krusty Project <i>Gabriel Domingos, Clarysson Alberto Mello da Silva, Cláudia Pereira Bezerra Lima</i>
<b>18:45 - 19:00</b>	R01_ 24032	Simulation of the control of a thermal nuclear reactor through a Fuzzy PID controller coupled to the core's neutronic control system and its effects on the primary pressure and instrumentation system

**MAY 9, THURSDAY****Sala de Seminário 2A****R07 - Nuclear Security**

Time	PaperID	Title / Authors
15:45 - 16:00	R07_ 23968	Initial Study of Residual Radioactivity in Topaz during Neutron Color Treatment at TRIGA IPR-R1 Reactor <i>Natalia Mendes, Daniel de Almeida Magalhães Campolina, Fernando Soares Lameiras, Ivan Gonçalves Mendes, Maria Ângela de Barros Correia Menezes, Aimoré Dutra Neto, Luiz Claudio Meira Belo</i>
16:00 - 16:15	R07_ 24227	Fusion and Non-Proliferation. A study for a safeguards implementation experiment <i>Massimo Zucchetti</i>

**XXIII ENFIR POSTER SESSIONS****MAY 7, TUESDAY****Biblioteca -TOTEN 3****R01 - Nuclear Reactor Physics, Advanced Nuclear Reactors**

Time	Paper ID	Title / Authors
14:30 - 14:45	R01_ 23618	Floating Nuclear Power Plant: Option for water desalination in Brazil <i>Maritza Rodriguez Gual, Hugo da Costa Romberg, Nathalia Nunes Araujo, Marcos C. Maturana</i>
14:45 - 15:00	R01_ 23658	Preliminary study to propose a PWR Small Modular Reactor for a Nuclear Powered Submarine <i>Thais Duarte Tavares, Gaiáné Sabundjian</i>
15:00 - 15:15	R01_ 23675	A hybrid setup for neutron imaging and prompt-gamma activation analysis at research reactor IEA-R1 <i>Carlos Gabriel Santos da Silva, Frederico Antonio Genezini, Alexandre Pinho dos Santos Souza</i>
15:15 - 15:30	R01_ 23693	Closed nuclear fuel cycle strategy for NuScale-like reactor: safety parameters evaluation <i>Keferson de Almeida Carvalho, Graiciany de Paula Barros, Matheus Henrique dos Santos Araujo, Andre Augusto Campagnole dos Santos, Vitor Vasconcelos Araújo Silva, Tiago Augusto Santiago Vieira, Rebeca Cabral Gonçalves</i>
15:30 - 15:45	R01_ 23769	Assessment of Burnable Poison Reactivity in the ATF Fuel Assembly <i>Alfredo Abe, Claudia Giovedì, Thiago Carluccio</i>
15:45 - 16:00	R01_ 23803	Study of the Neutron Transport Equation in Molten Salt Small Modular Reactors <i>Empar Navarro Gamón, Antoni Vidal-Ferrándiz, Gumersindo Jesús Verdú Martín</i>
16:00 - 16:15	R01_ 23811	Efficient Acceleration in Solving the 2D Neutron Diffusion Equation with CUDA: Exploring the Collaborative Practicality of Colab <i>Paulo Igor de Oliveira Pessoa, Edson Hrnice Junior</i>
16:15 - 16:30	R01_ 23866	On the Starting and Operational Transients at the First Core Configuration of RMB based on Multigroup Diffusion Theory <i>Rubens Dos Santo</i>
16:30 - 17:00	<b>Coffee Break (Biblioteca)</b>	
17:00 - 17:15	R01_ 23892	Experimental Evaluation of Neutron Spectra in a Neutron Imaging Equipment of IEA-R1 Reactor. <i>Rafael Massao Massuda, Frederico Antonio Genezini</i>

17:15 - 17:30	R01_ 23967	Steady State Coupled calculations (Serpent-GeN-FOAM) applied to Molten Salt Fast Reactor (MSFR) <i>Tiago Augusto Santiago Vieira, Yasmin Martins Carvalho, Geovana Carvalho Silva, Keferson de Almeida Carvalho, Rebeca Cabral Gonçalves, Geovana Loren da Cruz, Vitor Vasconcelos Araújo Silva, Graiciany de Paula Barros, Andre Augusto Campagnole dos Santos</i>
17:30 - 17:45	R01_ 23971	Calculating the Expected Effective Multiplication Factor and Neutron Scalar Flux Profile in Statistically Homogeneous Random Media Using a Nonclassical Model <i>Leonardo Rodrigues da Costa Moraes, Ricardo Carvalho de Barros, Richard Vasques</i>
17:45 - 18:00	R01_ 24032	Simulation of the control of a thermal nuclear reactor through a Fuzzy PID controller coupled to the core's neutronic control system and its effects on the primary pressure and instrumentation system <i>Caetano Soares Fajardo</i>
18:00 - 18:15	R01_ 24041	Epithermal Lead-Cooled Micro-Reactor using Fuel-Moderator Assemblies <i>Seung Min Lee, Eduardo Lobo Lustosa Cabral, Miguel Mattar</i>
18:15 - 18:30	R01_ 24117	Study of Types of Salts for IMSR <i>Isabella Magalhães, Gabriel Calegario, Isabella Rezende Magalhães, Claúbia Pereira, Clarysson Silva</i>
18:30 - 18:45	R01_ 24126	Study of Criticality of a Fuel Rod Cladded with Zircaloy Doped with Graphene Nanotubes <i>Thomaz Lopes, Ary Machado Azevedo, Joana Batista Soares, Marcos Paulo Cavaliere de Medeiros, Wallace Vallory Nunes, Sergio Neves Monteiro, Domingos D'Oliveira Cardoso, André Ben-Hur da Silva Figueiredo, Paulo Cezar Rocha Silveira, Fernando Manuel Araújo Moreira</i>
18:45 - 19:00	R01_ 24127	Simulation of a Hypothetical Nuclear Fuel Element with Niobium-Doped Zircaloy Cladding <i>Ary Machado de Azevedo, Thomaz Jacintho Lopes, Marcos Paulo Cavaliere de Medeiros, Fernando Manuel Moreira, Wallace Vallory Nunes, Joana Batista Soares, Paulo Cezar Rocha Silveira, Sérgio Neves Monteiro, Domingos D'Oliveira Cardoso, André Ben-Hur da Silva Figueiredo</i>

## Biblioteca -TOTEN 5

### R02 - Nuclear Reactor Thermal Hydraulics, Reactor Safety Analysis, Nuclear Reactor Licensing and Regulation

Time	Paper ID	Title / Authors
14:30 - 14:45	R02_ 23847	Fluid Dynamic Investigation of the Cross-Flow Between Fuel Assemblies in Small Modular Reactors <i>Larissa Pinheiro, Pedro Vinhas, Pedro Nishiyama</i>
14:45 - 15:00	R02_ 23876	Safety Analysis Reports of First-Of-A-Kind Nuclear Reactors in Brazil: Proposal of Content for Deterministic Safety Analysis <i>Nelson Luiz Dias Ferreira, Claudia Giovedí Motta, Mike Modro, Alessandro Petruzzi</i>
15:00 - 15:15	R02_ 23615	Methodology applied in the identification of important SSC for Design Extension Conditions in a NPP <i>Maritza Rodriguez Gual, Jorge Armando Pereira Junior</i>
15:15 - 15:30	R02_ 23884	CFD Contribution for Thermo-Hydraulic Code Qualification Process Applied in Safety Analysis <i>Pedro Andrade Maia Vinhas, Claudia Giovedí Motta, Fernando Lage, Hugo Galvão, Alessandro Petruzzi</i>
15:30 - 15:45	R02_ 24013	Study on the Licensing Framework for Land Facilities Supporting Nuclear-powered Submarines in the United Kingdom <i>Douglas Brandão Baroni, Sad Sandrini Borsoi, Yuri Sartore Almada Soares, Patricia da Silva Pagetti, Miguel Mattar Neto, Marcos Coelho Maturana</i>
15:45 - 16:00	R02_ 24218	Void Coefficient of Reactivity in The IPEN/MB-01 Research Reactor With Plate-Type Fuel Elements <i>Ulysses d'Utra Bitelli, Hugo Rodrigues Landim, Maisa Goes Nunes, Misael de Sousa Jurema Junior, Rubens Seishi Wassano, Rodrigo Renan Baroni, Rafael Castro Monteiro, Marco Antonio Sabo, Luis Alberto Bocardo, Reginaldo Gilioli</i>
16:00 - 16:15	R02_ 23654	Periodic Safety Review (PSR) for Research Reactors in Brazil <i>Ana Rosa Baliza Maia, Amir Mesquita Zacarias, Jefferson J Vilela, Valéria Alcântara e Alves</i>
16:15 - 16:30	R02_ 23655	Critical component identification process for Angra 1 according to INPO AP913 <i>Ana Rosa Maia, Amir Mesquita Zacarias, Jefferson J. Vilela, Hugo da Silva Ferreira, Augustin A. Lopez, Valéria E. Alcântara e Alves</i>

**16:30 - 17:00 Coffee Break (Biblioteca)**

<b>17:00 - 17:15</b>	R02_ 23662	Towards Efficient and Accurate Thermal-Hydraulic Simulations: Turbulence Modeling for Aqueous Homogeneous Reactors <i>Daniel Milian Pérez, Abel Gamez Rodriguez, Daniel Evelio Milian Lorenzo, Carlos Alberto Brayner de Oliveira Lira</i>
<b>17:15 - 17:30</b>	R02_ 23668	Methodology for safety analysis of a nuclear-powered submarine applied to the Brazilian coastal zone <i>Matheus Cintra Goncalves, Miguel Mattar Neto, Patricia da Silva Pagetti de Oliveira, Marcos Coelho Maturana</i>
<b>17:30 - 17:45</b>	R02_ 23684	IPR-R1 Triga Reactor Aging Management Approach <i>Denise Camarano, Emanuelle Costa Silva, Jefferson José Vilela, Amir Zacarias Mesquita</i>
<b>17:45 - 18:00</b>	R02_ 23731	Numerical Analysis of the Rectangular Natural Circulation Loop of IPEN/CNEN-SP in the Dymola <i>Pedro Alexandre Pinto Celestino, Marcelo da Silva Rocha,</i>
<b>18:00 - 18:15</b>	R02_ 23758	An Overview of the xM3 Slow Power Ramp Transient Staircase Exercise <i>Daniel de Souza Gomes</i>
<b>18:15 - 18:30</b>	R02_ 23759	Advanced Tolerant-Fuels Composites of Uranium Nitride and Silicide <i>Daniel de Souza Gomes, Fabio Branco Vaz de Oliveira</i>
<b>18:30 - 18:45</b>	R02_ 23760	Analysis of heavy liquid-metal coolants <i>Daniel de Souza Gomes</i>
<b>18:45 - 19:00</b>	R02_ 23794	Risk Analysis in the Installation of Small Modular Reactors in Energy Poor Regions in Brazil <i>Vitor Schneider Assi Pereira, Gaiané Sabudjian</i>

**MAY 8, WEDNESDAY****Biblioteca -TOTEN 2****R04 - Artificial Intelligence and Virtual Reality, Nuclear Reactor Instrumentation and Control, Man Machine Interface**

<b>Time</b>	<b>Paper ID</b>	<b>Title / Authors</b>
<b>17:30 - 17:45</b>	R04_ 23652	Explainable Artificial Intelligence Applied to Images of Two-Phase Flow <i>Sandro Minarrine Cotrim Schott, R. N. de Mesquita</i>
<b>17:45 - 18:00</b>	R04_ 23692	Real-Time Expert System to Support Decision-Making in Nuclear Accidents with Release of Radioactive Plume <i>Bernardo Mendonça Caixeta, Vinicius Drumond Gonzaga, Andressa dos Santos Nicolau, Roberto Schirru, Claudio Marcio Nascimento Abreu Pereira</i>
<b>18:00 - 18:15</b>	R04_ 23699	Virtual Visit to Research Reactor IPEN/MB-01 <i>Hélio Pires Julião Borges Coelho, Gaiané Sabundjian</i>
<b>18:15 - 18:30</b>	R04_ 23773	City of Science at the Museum of Nuclear Knowledge: An Environment to Experience Science <i>Júlia Wagner Pereira, Leticia Antunes Ferreira Alves, Robson Bruno Fernandes da Silva Amador, Gabriel Mello dos Santos Abreu Mol, Hilary da Silva Lima, Raphael Rodrigo Pereira, Ana Paula Legey de Siqueira, André Cotelli do Espírito Santo, Sara Isnardo Fernandes, Eugenio Rangel Marins</i>
<b>18:30 - 18:45</b>	R04_ 23775	Argonauta Virtual Exhibition: Presentation on the Importance of a Research Reactor <i>Júlia Wagner Pereira, Leticia Antunes Ferreira Alves, Robson Bruno Fernandes da Silva Amador, Gabriel Mello dos Santos Abreu Mol, Hilary da Silva Lima, Raphael Rodrigo Pereira, Ana Paula Legey de Siqueira, André Cotelli do Espírito Santo, Sara Isnardo Fernandes, Eugenio Rangel Marins</i>
<b>18:45 - 19:00</b>	R04_ 23814	Metodologia, baseada em ciência de dados, de análise de doses de radiação ionizante de trabalhadores expostos ocupacionalmente. <i>Bruno José Borrajo Domingues, Tadeu Augusto de Almeida Silva</i>

**Biblioteca -TOTEN 3**

**R03 - Applied Mathematics and Computation, Computational Fluid Dynamics****R04 - Artificial Intelligence and Virtual Reality, Nuclear Reactor Instrumentation and Control, Man Machine Interface****R05 - Structural Mechanics, Nuclear Reactor Fuel Fabrication and Design, Fuel Cycle Management and Services****R06 - Nuclear Power Plant Viability, Design, Construction and Operation, Environmental Impact Applied to Nuclear Reactors and Fuel Cycle**

Time	Paper ID	Title / Authors
14:30 - 14:45	R05_ 23862	Case study of the effect of thermal treatment during and after casting of an Ag-In-Cd alloy <i>Guilherme de Oliveira, José Milton Gabriel Lopes, Victor Daniel Rodrigues Fogaça, José Roberto Ferreira, Diogo Costa de Oliveira</i>
14:45 - 15:00	R03_ 23869	Study of the vaporization kinetics of Cd in Ag-In-Cd alloys <i>Guilherme Costa de Oliveira, José Milton Gabriel Lopes, Victor Daniel Rodrigues Fogaça, Selma Luiza Silva Batocchio, José Marcelo Soares, Marco Aurélio de Souza Goes</i>
15:00 - 15:15	R03_ 23789	CFD Modeling of a Small Modular Lead-Cooled Fast Reactor: Steam Generator Temperature-Dependent Heat Sink Function <i>Ivan Keiti Umezu, Dario Martin Godino, Cristian Oliveira, Antonella Lombardi Costa, Clarysson Alberto Mello da Silva, Cláudia Pereira</i>
15:15 - 15:30	R04_ 23774	Use of Augmented Reality in the Design of Land Facilities Supporting Nuclear-Powered Submarines <i>Douglas Brandão Baroni, Rodrigo dos Reis Toth, Cristiane Lopes Canuto, Sad Sandrini Borsoi, Gabriel Nóbile Diniz</i>
15:30 - 15:45	R05_ 23817	Canonical Correlation between Burst Parameters of Zircalloy Rods in Accident Conditions <i>Andre Alexandrino Lotto</i>
15:45 - 16:00	R05_ 23870	Case study of the effect of thermal treatment during and after casting of an Ag-In-Cd alloy <i>Caio Fernandes de Melo Lima, Régis Reis</i>
16:00 - 16:15	R05_ 23875	Microstructural characterization of austenitic stainless steel nuclear grade tubes submitted to laser marking process <i>Douglas Francis Alves Ferreira, Natalia de Oliveira Souza</i>
16:15 - 16:30	R05_ 24157	Analytical Method Validation for Hydrogen and Nitrogen Quantification in Austenitic Stainless Steel Thin Wall Tubes <i>Fábio de Camargo, Diego Ferreira Lima, Júlio César de Paiva, Florinda Vieira, Ieda de Souza Silva</i>
16:30 - 17:00	<b>Coffee Break (Biblioteca)</b>	
17:00 - 17:15	R05_ 23870	Comparison Between In-reactor Oxidation Behavior of Iron and Zirconium Alloys <i>Caio Fernandes de Melo Lima, Régis Reis</i>
17:15 - 17:30	R05_ 23871	Elastic behavior of a PWR spacer grid spring: Experimental characterization and computational simulation <i>Natália de Oliveira Souza, Douglas Francis Alves Ferreira, Leonardo de Souza Lima</i>
17:30 - 17:45	R05_ 23751	Analysis of Fuel Rods Buckling through Computer Simulation Using the Finite Element Method with Shell and Solid Elements <i>Leonardo de Souza Lima, Cláudia Giovedí Mota</i>
17:45 - 18:00	R06_ 24135	Management Proposal for Monitoring an Electromechanical Assembly of a PWR Nuclear Type <i>Eduardo de Souza Tavares, José Silvio Pessoa Filho, Tiago Turcarelli, André Luiz Candido da Silva</i>
18:00 - 18:15	R06_ 23681	Quantum-Inspired Estimation Of Distribution Algorithm To Solve The Nuclear Reactor Reload Problem(NRRP) <i>Luiz Gustavo Hoyer da Silva Costa, Roberto Schirru</i>
18:15 - 18:30	R06_ 23696	Environmental Costs of Nuclear Reactors: a Literature Review <i>Flavia Paladino Biaty, Giovana Ciongoli, Patricia Andrea Paladino, Gaiané Sabundjian</i>

- 18:30 - 18:45** R06\_ 23721 Development of a prototype ROV for underwater inspections in the IEA-R1 reactor pool  
*Giovana Ciongoli, Flávia Paladino Biaty, Gaiané Sabundjian, Patrícia Andrea Paladino*
- 18:45 - 19:00** R06\_ 23766 Thermophysical Characterization of Uranium Alloys and doped UO<sub>2</sub> Pellets  
*Denise Camarano, Ana Maria Matildes dos Santos*

## Biblioteca -TOTEN 5

### R02 - Nuclear Reactor Thermal Hydraulics, Reactor Safety Analysis, Nuclear Reactor Licensing and Regulation

### R05 - Structural Mechanics, Nuclear Reactor Fuel Fabrication and Design, Fuel Cycle Management and Services

### R06 - Nuclear Power Plant Viability, Design, Construction and Operation, Environmental Impact Applied to Nuclear Reactors and Fuel Cycle

### R07 - Nuclear Security

Time	Paper ID	Title / Authors
<b>14:30 - 14:45</b>	R06_ 24006	Smart Nuclear Reactor: safety and radioprotection to enable the energy transition in Brazil <i>Gleyson Santos, José Ubiratan Delgado, José Francisco Pereira, Dayana Azeredo Conceição</i>
<b>14:45 - 15:00</b>	R06_ 24116	A Nuclear Fuel Life Cycle for an Angra 2 Refueling <i>Paulo Jorge Figueiredo, Paulo Fernando Ferreira Frutuoso e Melo, Antonio Carlos Marques Alvim, Antonio Sergio de Martin Alves</i>
<b>15:00 - 15:15</b>	R07_ 23680	Cybersecurity for Nuclear Plants against Virus Similar as Stuxnet <i>Julia Fernanda de Lucas Rocha, Pamela Grazielle Pimentel Rodrigues</i>
<b>15:15 - 15:30</b>	R07_ 23780	Case beyond Bocaina <i>Jailton Ferreira</i>
<b>15:30 - 15:45</b>	R07_ 23999	On the Exploitation of Human and Technological Vulnerabilities in the Nuclear Sector: A Case Study at a Research Institute <i>Guilherme Dutra Gonzaga Jaime, Eduardo Andrade de Jesus, Claudio Marcio do Nascimento Abreu Pereira</i>
<b>15:45 - 16:00</b>	R05_ 23653	Impressed Current Effects on a Metal Subject to Different Electrolytes <i>Wagner de Almeida Machado, Raphael Gomes de Paula, Amir Zacarias Mesquita, Wallacy Viana</i>
<b>16:00 - 16:15</b>	R05_ 23664	Dynamics of Hydride Formation in Zircaloy-4 for Nuclear Applications <i>Beatriz Rovelo, Leonardo Henrique Comini Francisco, Nathanael Wagner Sales Moarais, José Oscar Vega Bustillos</i>
<b>16:15 - 16:30</b>	R05_ 23682	The effects of support nonlinearities in the piping structural response <i>Joedson Teixeira de Almeida, Miguel Mattar Neto</i>

## 16:30 - 17:00 Coffee Break (Biblioteca)

<b>17:00 - 17:15</b>	R02_ 23897	A Study on Application of SPAR-H Method for Human Reliability Analysis of an Electric-electronic System of a Mechanism for Moving a Nuclear Fuel Irradiation Capsule <i>Eduardo Tadeu Stehling Saraiva, Vanderley de Vasconcelos, Daniel de Almeida Magalhães Campolina</i>
<b>17:15 - 17:30</b>	R02_ 23963	Estimating the risk of developing solid cancer as a function of meteorological conditions in a LOCA scenario <i>Zelmo Rodrigues de Lima, Juliana Luzié Oliveira Pereira, Rafael Fagundes Rangel, Simão Cirineu Zoccolaro, Thiago Arrais Soares</i>
<b>17:30 - 17:45</b>	R02_ 23976	Analysis of the CASP2 Experiment in the Battelle Containment Model using the Code COCOSYS <i>Hugo Pontes Galvão, Claudia Giovedi Motta, Alfredo Yuuitiro Abe, Ana Carolina Bortolletto Dantas</i>
<b>17:45 - 18:00</b>	R02_ 23977	Nodalization of MISTRA facility for ISP-47 experiment using lumped parameter code COCOSYS <i>Ana Carolina Dantas, Hugo Pontas Galvão, Alfredo Yuuitiro Abe, Claudia Giovedi Motta</i>
<b>18:00 - 18:15</b>	R02_ 24002	Thermohydraulic Performance in SMR Reactors with Mixed Oxide (U, Th)O <sub>2</sub> Fuel: A Computational Approach

- 18:15 - 18:30** R02\_ 24027 Digital Simulation for Education and Training in the Operation of Triga-Type Nuclear Research Reactors  
*Adriano de Almeida Massaud Felipe, Amir Zacarias Mesquita, Aldo Márcio Fonseca Lage, Alexandre Soares Leal, Vitor Fernandes de Almeida*
- 18:30 - 18:45** R02\_ 24080 Validation of Computational Fluid Dynamics Simulations in Small Modular Reactor Projects using Radioactive Particle Tracking Technique  
*Wilson dos Santos Vieira, Hagos Mariano de Souza Vieira, Eudes Bertony Vieir, Carlos Alberto Brayner de Oliveira Lira*
- 18:45 - 19:00** R02\_ 24178 CFD Modeling for Application in Prototypes Printed with 3D Printing  
*Wallen Ferreira de Souza, Ana Laura Coutinho, Maria Auxiliadora Fortini Veloso, Graiciany de Paula Barros, Andre Augusto Campagnole dos Santos*

## MAY 9, THURSDAY

## Biblioteca -TOTEN 2

### R04 - Artificial Intelligence and Virtual Reality, Nuclear Reactor Instrumentation and Control, Man Machine Interface

- | Time                 | Paper ID   | Title / Authors  |
|----------------------|------------|--|
| <b>14:30 - 14:45</b> | R04_ 23825 | Development of Nuclear Instrumentation Using PROTEUS Software<br><i>Mauro Vitor de Oliveira, Marcos Santana Faria</i>  |
| <b>14:45 - 15:00</b> | R04_ 23826 | Remote Radiation Monitor with Door Locking for Safe Cyclotron Operation<br><i>Fábio Lacerda, Marcos Santana Farias</i>   |
| <b>15:00 - 15:15</b> | R04_ 23836 | Development of an "In-mast" Fuel Monitoring System for Nuclear Power Plants<br><i>Mauro Vitor de Oliveira, Marcos Santana Faria</i>  |
| <b>15:15 - 15:30</b> | R04_ 23839 | Automation System of Initial Operation Conditions and Accident Identification for LABIHS Simulator<br><i>Silas Cordeiro Augusto, Vinicius Cradoso Brum, Cláudio Márcio Nascimento Abreu Pereira, Cláudio Henrique dos Santos Grecco, Marcos Santana Farias, Guilherme Dutra Jaime, Helio Carlos Leite Oliveira, Nelson Fernandes</i> |
| <b>15:30 - 15:45</b> | R04_ 23916 | Optimization of Nuclear Fuel Burnup with Genetic Algorithms to Maximize PWR Operation Cycle Length<br><i>Pedro Henrique Silva Rodrigues, Arthur Reis Martins, José Rubens Maiorino</i>   |
| <b>15:45 - 16:00</b> | R04_ 23944 | Administration Module (Dynamic Load-balancing System)<br><i>Francisco Junqueira Muniz</i>  |
| <b>16:00 - 16:15</b> | R04_ 23975 | An LSTM Model Applied to Wind Forecast in a Brazilian Nuclear Power Plant Site: Basic Investigations<br><i>Cláudio Márcio do Nascimento Abreu Pereira, Ana Gabriella Amorim Abreu Pereira</i>  |

## 16:15 - 16:45 Coffee Break (Biblioteca)

- 16:45 - 17:00** R04\_ 23986 Modernization of High-Voltage Power Supplies for Ionization Chambers of Argonauta Research Reactor  
*Fábio Lacerda, Marcos Santana Farias*
- 17:00 - 17:15** R04\_ 23998 Data Server Development for storage and processing of Argonauta Reactor Operation Data  
*Guilherme Dutra Gonzaga Jaime, Marcos Santana Farias, Levy Farias*
- 17:15 - 17:30** R04\_ 24030 The Development of the Generative AI-Based Tool 'Wizzard Machine' Specialized in the Brazilian Radioisotope Market  
*Larissa Cunha Pinheiro, Ricardo Fernandes de Araújo, Iago Gomes, João Victor Gioseffi Maciel Alegrio Lopes*
- 17:30 - 17:45** R04\_ 24179 IoT Supervision Platform for the TRIGA IPR-R1 Reactor  
*Thalles Oliveira Campagnani, Luiz Claudio Andrade Souza, Carlos Eduardo Velasquez Cabrera*

**17:45 - 18:00**



**Biblioteca -TOTEN 3****R01 - Nuclear Reactor Physics, Advanced Nuclear Reactors****R03 - Applied Mathematics and Computation, Computational Fluid Dynamics**

Time	Paper ID	Title / Authors
14:30 - 14:45	R01_ 24128	Comparative Analysis of the Criticality of a Hypothetical Reactor Fuel Element with SiC-Doped Zircaloy-4 Rods <i>Ary de Azevedo, Thomaz Jacintho Lopes, Marcos Paulo Cavaliere de Medeiros, Fernando Manuel Moreira, Wallace Vallory Nunes, Joana Batista Soares, Paulo Cezar Rocha Silveira, Sérgio Neves Monteiro, Domingos D'Oliveira Cardoso, André Ben-Hur da Silva Figueiredo</i>
14:45 - 15:00	R01_ 24129	Simulation of a Hypothetical PWR Fuel Element with Molybdenum-Doped Zircaloy Cladding <i>Thomaz Lopes, Ary Machado Azevedo, Joana Batista Soares, Wallace vallory Nunes, André Ben-Hur da Silva Figueiredo, Marcos Paulo Cavaliere de Medeiros, Paulo Cezar Rocha Silveira, Domingos D'Oliveira Cardoso, Sergio Neves Monteiro, Fernando Manuel Araújo Moreira</i>
15:00 - 15:15	R01_ 24137	Unraveling the Secrets of the Molten Salt Reactor: A Journey Through Neutronics Analysis <i>Magda Tororó, Itamar Arnaldo Tororó Pereira, Cláudio Luiz de Oliveira, Ronaldo Glicério Cabral, Sergio de Oliveira Vellozo</i>
15:15 - 15:30	R01_ 24172	Comparison of MCNP and OpenMC Monte Carlo codes on Steady-State Neutronic Simulation of SEALER Nuclear Reactor <i>Jefferson Campos Duarte, Thalles Oliveira Campagnani, Clarysson Alberto Mello da Silva, Cláudia Pereira Bezerra Lima</i>
15:30 - 15:45	R01_ 24175	Fuel Element Microreactor integrating a square UO <sub>2</sub> fuel rod with an internal heat pipe <i>Horus Ibrahim Orlandi, Pedro Carlos Russo Rossi, Adolfo Aguiar Braid, João Manoel Losada Moreira</i>
15:45 - 16:00	R03_ 23752	3D CAD PILOT UNIT DESIGN AND SIMULATION OF TWO-PHASE FLOW CIRCULATION IN FULL LOOP WITH HIGH SOLIDS CONCENTRATION <i>Leandro Claudino da Silva, Carlos Costa Dantas, Sívio de Barros Melo, Milton dos Santos Viana, Eudes Bertony Vieira</i>
16:00 - 16:15	R03_ 23894	Application of the Method of Characteristics in Fluid-Structure Interaction Problems of Hydraulic Systems with Four Degrees of Freedom <i>Micelli Rodrigues Camargo, Marcelo da Silva Rocha, Josie Aguilã Alves de Campos</i>
16:15 - 16:45	<b>Coffee Break (Biblioteca)</b>	
16:45 - 17:00	R03_ 23926	CFD Modelling of Desalination using Direct Contact Membrane Distillation (DCMD) <i>Paulo Augusto Berquó de Sampaio</i>
17:00 - 17:15	R03_ 23969	Comparison of Different Mesh Elements in Simulating a Spacer Grid <i>Tiago Augusto Santiago Vieira, Yasmim Martins Carvalho, Pedro Henrique Araújo, Davi Cury, Vitor Vasconcelos Araújo Silva, Graiciany de Paula Barros, Andre Augusto Campagnole dos Santos</i>
17:15 - 17:30	R03_ 24119	From CUDA to OpenACC: Democratizing GPU Computing in Nuclear Science <i>Guilherme Dutra Gonzaga Jaime, Guilherme de Melo Baptista Domingues, Fernando Rodrigues Trindade Ferreira,</i>
17:30 - 17:45	R03_ 24150	GeN-Foam first assessment for simulation of spacer grids <i>Tiago Augusto Santiago Vieira, Carlos Rodrigo Dias, Vitor Vasconcelos Araújo Silva, Graiciany de Paula Barros, Andre Augusto Campagnole dos Santos</i>
17:45 - 18:00	R03_ 24238	Aplicação de uma metodologia numérica para o processamento e avaliação da circulação natural em reatores nucleares <i>José Luiz Horacio Faccini, Laira Lopes Silva, Leandro Tavares da Silva</i>

**Biblioteca -TOTEN 5****R01 - Nuclear Reactor Physics, Advanced Nuclear Reactors****R05 - Structural Mechanics, Nuclear Reactor Fuel Fabrication and Design, Fuel Cycle Management and Services****R07 - Nuclear Security**

Time	Paper ID	Title / Authors
14:30 - 14:45	R05_ 23739	Depletion and inventory calculation for the new fuel of IEN's Argonauta reactor <i>Iago de Oliveira Gomes, Victor Luis Lassance Cunha, Maria de Lourdes Moreira</i>
14:45 - 15:00	R05_ 23750	Simulation of Spacer Grid Static Compression Test Using Finite Element Models <i>Rafael Silva Brandão dos Santos, Claudia Giovedi Motta</i>
15:00 - 15:15	R05_ 23751	Analysis of Fuel Rods Buckling through Computer Simulation Using the Finite Element Method with Shell and Solid Elements <i>Leonardo de Souza Lima, Claudia Giovedi Motta</i>
15:15 - 15:30	R05_ 23795	Study of the renewed pipework of the TR-1B Cooling Tower of the IEA-R1 RR <i>Altair Antonio Faloppa, Gerson Fainer, Joedson Teixeira de Almeida, Miguel Mattar Neto</i>
15:30 - 15:45	R05_ 23832	Thermo-mechanical analysis of the core vessel of pebble bed High Temperature Reactors <i>Abel Gámez Rodríguez, Daniel Milian Pérez, Carlos Alberto Brayner de Oliveira Lira</i>
15:45 - 16:00	R05_ 23871	Elastic behavior of a PWR spacer grid spring: Experimental characterization and computational simulation <i>Natália de Oliveira Souza, Douglas Francis Alves Ferreira, Leonardo de Souza Lima</i>
16:00 - 16:15	R05_ 23920	A purification process for the tetrauranium fluoride effluent <i>Rafael Garcia, Elita Fontenele Urano de Carvalho, Yasko Kodama, Devin L. Shaffer, Humberto Gracher Riella, Giovanni Cabral Conturbia</i>
16:15 - 16:45	<b>Coffee Break (Biblioteca)</b>	
16:45 - 17:00	R05_ 23930	Interlaminar Fractographic of Carbon Fiber/Epoxy Composites <i>Kletson Vieira da Silva, Gerson Marinucci, Delvonei Alves de Andrade</i>
17:00 - 17:15	R05_ 24094	Recrystallization study of the 348 stainless steel <i>Nathanael Wagner Sales Morais, Mateus Perroti, Luiz Gallego Martinez, Zacarias Eduardo Fabrim, Cláudio Geraldo Schon, Edson Garcia Gomes, Jesualdo Luiz Rossi</i>
17:15 - 17:30	R05_ 24111	A Small Punch Test Device Developed for Low Temperature Tests with Initial Acceptance Results <i>Altair Antonio Faloppa, Carlos Alexandre de Jesus Miranda, José Rodrigues de Lima, Raquel de Moraes Lobo, Fernando da Silva Caja, Miguel Mattar Neto</i>
17:30 - 17:45	R01_ 23936	PARAMETERIZED REPRESENTATION OF THE MACROSCOPIC SECTION OF THE PWR REACTOR WITH EFFICIENCY ANALYSIS <i>João Claudio Batista Fiel</i>
17:45 - 18:00	R07_ 23937	REGIONAL NUCLEAR SECURITY PROJECT IN THE REALITY OF THE AMERICAN CONTINENT <i>Joao Claudio Batista Fiel</i>