NUTHOS-8 technical topics

① **Basic Thermal-Hydraulics on water-cooled reactors**　　前 5 篇**J. Buongiorno**，后 5 篇**L. Leung**

N8P0076	Experimental research on evolvement of oscillation in parallel rectangular channels
N8P0269	Experimental Investigation and Modeling of a Two-Phase Bubbly Flow in Horizontal Pipe
N8P0286	Bubble Parameters in Vertical Subcooled Boiling Flow
N8P0303	Investigation of Influence of Inlet Flow Conditions on Flow Structure in a Dual Elbow
N8P0305	Analysis of generating mechanism of liquid droplet jet stream at the orifice downstream area
N8P0082	New method for heat transfer correlation of mixed convection
N8P0133	Flow-induced acoustic vibration at the mouth of one or two side branches
N8P0200	Droplet-Induced Two-Phase Heat Transfer Augmentation Downstream of a Spacer Grid During Dispersed Flow Film Boiling
N8P0263	Study on Thermohydraulics Characteristic of Annular Tube Once-through Steam Generator
N8P0306	Effect of Pressure Tube Radial Creep on Thermal Hydraulic Performance of Pressure Tube Type Nuclear Reactors

② **Design analysis for the water-cooled reactors**　　前 5 篇**I. Pioro**，后 4 篇**Z.J. Xiao**

N8P0247	A comprehensive review on the methodologies to simulate the nuclear fuel bundle for the thermal hydraulic experiments
N8P0345	AN EXPERIMENTAL STUDY OF FLOW INSTABILITY IN SUBCHANNELS WITH SUBCOOLED VOID AT LOW PRESSURE
N8P0120	Phenomenal Investigations of the Thermal-hydraulic Responses of Multi-Dimensional Simulation and Modeling in Core and Downcomer during the L2-5 Test of LOFT Using RELAP5-3D/K
N8P0190	Local hydrodynamics and mass-transfer of coolant in VVER-1000 FA with mixing grids
N8P0309	Core sub-cooled boiling of the Bandung TRIGA 2000 Reactor
N8P0110	Power Distribution's Study on Porous Media with Strong Internal Heat Source
N8P0184	New designs of water-cooled water-moderated power reactors
N8P0210	Research on Optimal Design of Condenser Weight in Nuclear Power Plant
N8P0152	Optimal Configuration for a Two-phase Natural Circulation

N8P0358   THERMAL-HYDRAULIC SAFETY ANALYSIS EVALUATION FOR ANGRA1 NPP AFTER REPLACEMENT STEAM GENERATOR, 16NGF FA INSERTION AND POWER UPRATE

⑤ Safety Analysis in LMFBRs   前 5 篇C. Latge，后 6 篇H. Ohshima

N8P0051   Transient Analytic Method of A Liquid-metal Cooled Reactor: TOPAZ Ⅱ

N8P0083   Development of the SPECTRA code for Lead-cooled systems and application to operational transients of the ELSY reactor

N8P0104   Reactivity Insertion Accident Simulation of ELSY Lead Fast Reactor with RELAP5 Code

N8P0154   Thermal-hydraulic researches of safety problems in fast breeder reactors

N8P0341   CSAU Evaluation of an ULOF Accident for the FBR Monju

N8P0324   Preliminary Experimental and numerical assessment of a secondary Scram System for Liquid Metal Cooled Reactors.

N8P0250   Mechanism of growing dendritic oxides on sodium combustion

N8P0287   Sodium Pool Bubbling Experiment by Hydrogen for Simulating Sodium-Concrete Reaction

N8P0337   Wastage Rate Modeling with Bayesian Network Approach in Sodium-Water Reaction of Sodium Fast Reactor

N8P0106   RELAP5 code validation in the framework of the LACANES OECD/NEA benchmark for HLM innovative nuclear system

N8P0156   Thermohydraulic problems of heavy liquid metal cooled reactor core

⑥ Thermal Hydraulics in LMFBR Components   前 6 篇S. Monti，后 6 篇K. Van Tichelen

N8P0036   Thermal Mixing in T-junctions

N8P0038   Thermal Striping in Triple Jet Flow

N8P0040   Argon Entrainment into Liquid Sodium in Fast Breeder Reactor

N8P0112   Investigation on Sodium Droplet Impingement Phenomenon during Steam Generator Tube Failure Using MPS Method

N8P0236   Investigation on the heat transfer characteristics of the liquid sodium in narrow channels

N8P0295   Numerical simulation on natural convection of liquid metal lithium-lead in a rectangular enclosure

N8P0039   Flow Distribution in the Inlet Plenum of Steam Generator

N8P0081   Thermal-hydraulics analysis of Monju upper plenum in 40% rated power operational condition

N8P0266   Effects of Wire Spacer Contact and Pellet-Cladding Eccentricity on Fuel Cladding Temperature under Natural Circulation Decay Heat

Removal Conditions in Sodium-cooled Fast Reactor

N8P0301　　Pressure Measurement Test of Single Elbow Simulating Cold-Leg Piping in JSFR

N8P0357　　A Computational Fluid Dynamics Based Design of Thermal jet Mixing Experiments for Two Liquid Metals

N8P0363　　Experimental study on natural convection in liquid gallium

⑦ Thermal-hydraulics and safety of gas-cooled reactors　　前 6 篇 H. Chang Oh，后 5 篇 T. Takeda

N8P0045　　Transient Heat Transfer from a Horizontal Cylinder in the Perpendicular and Parallel flow of Helium Gas

N8P0243　　Diffusion Bonded Compact High-temperature Heat Exchangers: Thermal Hydraulic Performance, Microstructural and Mechanical Characterization

N8P0264　　Heat transfer characteristics of one-side heated vertical rectangular channel

N8P0284　　A High Fidelity JTopmeret© Model for Gas-Cooled Reactors

N8P0321　　Development of Local Heat Transfer and Pressure Drop Models for Pebble Bed High Temperature Gas-Cooled Reactor Cores

N8P0333　　Thermal Response of the HTR-10 during Loss of Forced Cooling Test without Reactor Scram

N8P0336　　 Experimental Study on Core Bypass Flow of Very High Temperature Gas-cooled Reactor and Status of Nuclear Hydrogen Project in Korea

N8P0031　　Analysis Of Steam Generator Tube Rupture Event In HTR-MODUL Reactor

N8P0249　　RELAP5 Analysis of Deep Burn High Temperature Reactor Core

N8P0339　　Natural Circulation Pattens in the VHTR Air-ingress Accident and Related Issues

N8P0369　　CATHARE 2 code validation on HE-FUS3 loop

⑧ Thermal-hydraulics and safety of fusion systems　　前 5 篇 T. Kunugi，后 4 篇 Y.C. Wu

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N8P0087　　Thermal-Hydraulic Analysis and Experiment with a Hypervapotron Mock-Up for the ITER First Wall

N8P0149　　Numerical Simulations on Transient Conjugated Heat Transfer within IFMIF High Flux Test Module

N8P0245   NUMERICAL SIMULATION OF WATER-COOLED FIRST WALL OF THE DUAL-COOLED WASTE TRANSMUTATION BLANKET

N8P0331   Numerical simulation of MHD flow in magnetic field inlet region in the insulating rectangular duct

N8P0105   Thermal-hydraulic System Study of a high pressure, high temperature helium loop using RELAP5-3D code

N8P0330   Accident Sequences Analysis of Chinese ITER Dual Functional Lithium-Lead Test Blanket Module

N8P0332   Thermophysical Properties of Lithium-Lead Eutectic Alloy for Use in Fusion Reactor Safety Analysis

N8P0178   Analysis of the consequences of targets feeding pipe rupture in Wendelstein 7-X experimental nuclear fusion device

⑨Thermal-hydraulics and safety of transmutation reactor systems and molten salt reactors   前 4 篇**H. Oigawa**，后 4 篇**S.Z. Qiu**

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N8P0069   Studies on free surface behavior of windowless target

N8P0234   Characteristics of Heavy Liquid Metal Flow and Heat Transfer in a Single Fuel Rod Simulator

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N8P0077   Direct Reactor Auxiliary Cooling System (DRACS) Design and Analysis for the PB-AHTR

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N8P0065   CFD analyses of the obstacle effect on heat transfer deterioration in vertical upward tubes cooled by supercritical water

N8P0153   Thermal Analysis of a Test Fuel Element for a Reactor with Supercritical Water

N8P0186   Anelastic, non-Boussinesq simulations of turbulent convective flows at supercritical pressure

N8P0187   Numerical Study on Supercritical Fluids Flow and Heat Transfer under Buoyancy

N8P0043   CFD study on heat transfer to supercritical water in simple channel with local geometrial components

N8P0227   Application of a pdf-Turbulence Model to the Heat Transfer of Supercritical Water

N8P0251   Assessment of Applicability of Large Eddy Simulation for Heat Transfer Deterioration of Supercritical Pressure Fluids

N8P0272   Conjugate Heat Transfer to Supercritical Water Flowing around a Single Wire-Wrapped Rod

N8P0335   Numerical Simulation of thermal- hydraulics of supercritical fluid flow in a 7-rod bundle

⑪ **Experimental and numerical study on supercritical fluids**   前 5 篇**S. Bilbao**，后 4 篇**D.H. Lu**

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N8P0098   Experimental Study of Phase Transition During Depressurization across Critical Pressure

N8P0338   Experimental investigation of heat transfer and pressure drop in supercritical water flowing inside channels

N8P0195   Mini-channel supercritical CO_2 heat transfer:effects of buoyancy

N8P0207   Scaling analysis for heat transfer in supercritical fluids

N8P0213   Instability Analysis of Natural Circulation at Supercritical Pressure

N8P0226   On the applicability of a one-dimensional two-fluid flow model to simulation of flows and heat transfer at near- and supercritical pressures

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⑫ **Safety system and Core design of SCWR**   前 5 篇**H.Y. Gu**，后 5 篇**T. Schulenberg**

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N8P0016   Uncertainty and Snesitivity Analysis for the High Performance Light Water Reactor With TRACE and SUSA

N8P0111   Study on moderator flow behaviors of a supercritical water-cooled reactor with a three-pass core arrangement

N8P0191   Conceptual design of the safety system for a SCWR fuel qualification test

N8P0189   Mechanical Analysis of a Test Fuel Assembly for a Reactor with Supercritical Water

N8P0163   ESTIMATION OF ONE-THROUGH THERMODYNAMIC SCHEME PARAMETERS FOR SUPERCRITICAL WATER COOLED REACTOR

N8P0113   Mechanical Analysis of a Test Fuel Assembly for a Reactor with Supercritical Water

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⑬ Thermal-Hydraulics Experiments Relating to Tow-phase flow　　前 5 篇**W.P. Baek**，后 5 篇**M.H. Prasser**

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N8P0126   Chaotic oscillations in two-phase natural circulation system under rolling motion condition

N8P0124   Hydrodynamic characteristics of two-phase flow through packed bed with spheres

N8P0177   Experimental study on bubble behaviors in natural circulation under rolling condition

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N8P0169   Pipe wall thinning in downstreams of an orifice by high-speed gas-liquid two-phase flow

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⑭ Thermal-Hydraulics Experiments and modeling Relating to CHF　　前 5 篇**D. Groeneveld**，后 4 篇**X.D. Sun**

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N8P0198   Transient CHF Phenomena by Photographic Study on Boiling Behavior

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N8P0300   CHF Experiments for IVR-ERVC Strategy using 2-D Slice Test Section

N8P0208   CHF Enhancement in Flow Boiling using Al2O3 Nano-fluids and Al2O3 Nano -particle Coating Tube

N8P0221   Assessment of CHF Characteristics at Subcooled Conditions for the CANDU CANFLEX Bundle

N8P0222   An experimental study on the critical heat flux for low pressure of water in a uniformly heated vertical tube

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N8P0188   Measurements of turbulent flows in a 2x2 Rod bundle

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N8P0304   Flow Characteristics of Taylor Vortices in a New Type Liquid-liquid Countercurrent Centrifuge Extractor

N8P0267   Study on Characteristics of Flow Resistance under Periodical Flow Fluctuation Condition in Rectangular Channel

N8P0293   Void Fraction Measurement of Two-phase Flow with Microbubbles by Constant Electric Current Method

N8P0354   Research on velocity and temperature distributions in a steam-driven turbulent jet in a subcooled water

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⑯ **Advances in numerical methods**   前 6 篇**M. Murase**，后 6 篇**D. Novog**

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N8P0131   A homogenization approach for studying two phase heat exchanger performance

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N8P0135   Simulating on the condensing of one Freon bubble in a subcooled pool with MPS-MAFL

N8P0232   NUMERICAL STUDY ON FLOW DISTRIBUTION AND TURBULENT FLOW IN XT-ADS ROD BUNDLE WATER EXPERIMENT

N8P0072   SIMULATION ON THE VORTEX SHEDDING CHARACTERISTIC OF SINGLE ENLONGED PLATE IN AN RIGIDITY RECTANGULAR

CHANNEL

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N8P0079	An overview of modeling methods for thermal mixing and stratification in large enclosures for reactor safety analysis
N8P0084	Monte Carlo Simulation of Relative Permeability in Fractal Porous Media with capacity pressure difference effect
N8P0209	A numerical study of flow and heat transfer characteristics of micro-wavy tubes in laminar flow
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N8P0199	Analytical Tool for Evaluating Critical Power Ratio of Irradiated Fuel String in NRU Reactor
N8P0030	Best Estimate Analysis Platform Based on Multi-Scale and Multi-Physics Coupling
N8P0322	PEACH BOTTOM INSTABILITY ANALYSIS WITH A RELAP5/PARCSV2.7 DETAILED THERMALHYDRAULIC-NEUTRONIC MODEL
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N8P0270　　Interaction of a helium/air stratified layer with an air jet coming from below in the MISTRA facility: large scale experiments and scaling analysis

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N8P0141   Verification of Void Fraction Conversion Methodology by means of Differential Pressure Measurement during the Steam Explosion in the TROI Experiment

N8P0127   LWR Severe Accident Research Activities at the Karlsruhe Institute of Technology

N8P0226   Analysis of the first Separate Effect VULCANO test on Molten Core Concrete Interaction with an oxidic prototypic corium

N8P0271   Experimental Results on the Coolability of a Debris Bed with Downcomer Configurations

N8P0233   An Experimental Study on Coolability of Volumetrically Heated Particulate Beds of Prototypical Characteristics

㉘ Safety Code Developments and Assessment   前 5 篇 C.H. Song，后 5 篇 B. Woods

N8P0217   Uncertainty Analysis of Molten Corium-Concrete Interaction during the Postulated Degraded Core Accidents for the Typical PWR

N8P0308   Uncertainty Analysis of Common Cause Failure of Nuclear Power System

N8P0347   Comparison of two kind of uncertainty analysis method In dynamic reliability assessment

N8P0078   Evaluation of RCS Rapid Depressurization for Severe Accident Mitigation Using SCDAP/RELAP5

N8P0119   Research on Core Melt Process in IVR-ERVC Evaluation of CPR1000

N8P0166   Comparable Simulation of Corium Concrete Interaction Using ASTEC, MELCOR and CONTAIN Computer Codes

N8P0185   The Study of a Web-based Severe Accident Analysis Model Based on MAAP5

N8P0316   CFD Analysis of Core Melt Spreading on the Reactor Cavity Floor

N8P0058   Simulation of the Fuel Rod Bundle Test QUENCH-03 Using the Integral Code ASTEC V2

N8P0312   Physics of Water Ingression Phenomena in Melt Pool Coolability

㉙ Safety analysis on the severe accident   前 6 篇 J.H. Song，后 6 篇 K. Vierow

N8P0298   An Approach to Prediction of Fraction of Agglomerated Debris

N8P0170   Study on the Progression of Severe Accident induced by SGTR and Mitigation Measures

N8P0253   Study on the Atmospheric Diffusion Behavior of Radioactive Aerosol under Severe Accident Conditions

N8P0014   Fire water performance as a severe accident management measure in the station blackout accident

N8P0096   Application of Ant Colony Optimization Approach to Severe Accident Management Measures of Maanshan Nuclear Power Plant

N8P0168   Evaluation of the strategies "Inject into SGs" and "Depressurize the RCP

N8P0128   Experimental performance analysis for cold trap design

N8P0371   Severe Accident Management And Research at CGNPC

N8P0115   Study of VVER Steam Generator Operation in Condensation Mode with Non-condensable Gases Effect in Twenty-four-hour Experiments

N8P0118   Experimental Study on the Blowdown Load during the Steam Generator Feedwate Line Break Accident in the APR1400

N8P0220   STEAM CONDENSATION INDUCED WATER HAMMER PHENOMENA - AN EXPERIMENTAL AND THEORETICAL STUDY

N8P0174   RESEARCH OF HYDRODYNAMICS AND TEMPERATURE CHARACTERISTICS OF SOME PARTS OF HEAT EXCHANGE EQUIPMENT

㉚ PSA application to safety   前 6 篇 M.K. Kim，后 6 篇 B.Youngblood

N8P0334   FLOOD MITIGATION RESEARCH AND HRA INSIGHTS OF DAYABAY INTERNAL

N8P0257   Preliminary Level 1 PSA Results for SFR-600 Conceptual Design

N8P0095   Development of Level 2 PSA Methodology for Sodium-Cooled Fast Reactors (1) Overview of Evaluation Technology Development

N8P0102   Development of Level 2 PSA Methodology for Sodium-Cooled Fast Reactors (4) Identification of Dominant Factors in Core Material Relocation and Heat Removal Phases

N8P0103   Development of Level 2 PSA Methodology for Sodium-Cooled Fast Reactors (3) Development of Technical Basis in the Transition Phase of Unprotected Events

N8P0139   Development of Level 2 PSA Methodology for Sodium-Cooled Fast Reactors (6) Development of Technical Basis in Ex-Vessel Accident Sequences

N8P0180   Development of Level 2 PSA Methodology for Sodium-Cooled Fast Reactors (2) Development of Technical Basis in the Initiating Phase of Unprotected Events

N8P0193   Development of Level 2 PSA Methodology for Sodium-Cooled Fast Reactors (5) Development of Technical Basis for the Protected Loss of Heat Sink

N8P0107   Level 1 PSA for Canada's Supercritical Water Reactor

N8P0137 The Risk Impact from the Instrumentation Air System Modeling in Probabilistic Safety Assessment for a BWR-4 plant

N8P0157 Markov Modeling of Digital Instrumentation and Control Systems for Probabilistic Risk Assessments in Nuclear Power Plant

N8P0268 Risk Impact Analysis on the Design of the Alternate Offsite Power Source