Special Issue of Annals of Nuclear Energy (ANE)

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General Background

- At early stage, ANE agreed to publish a Special PHYSOR'08 Issue
- Thanks due, in particular, to Executive Editor Mike Williams
  - Encouragement and support
  - Acceptance to be the "judge" in selection process
- The goal: as-early-as-possible appearance of Special Issue

Selection Procedure

- Track Leaders recommended “best papers” from each track in mid-August
  - Criteria… originality, novelty, potential impact
- The 45 “candidates” forwarded immediately to Editor for “look-through”
- Selection meeting held with Editor in London towards end of August
- 26 papers selected by him, using “1-2 per track” as constraint
- Clarification of various points obtained from authors before conference
- Quality of the presentation also considered

Key Role of Track Leaders

- Selected and ranked “best papers” in their tracks

- Have agreed to carry out the necessary detailed reviews of the finally selected papers soon after the conference

A Big Thank You !

to …

1. *Nuclear Data:*
   A. Hasegawa, A.Trkov
2. *Transport Theory:*
   J.E. Morel, P.Ravetto
3. *Monte Carlo Developments:*
   F. Brown, J.E. Hoogenboom, W. Martin
4. *Core Analysis Methods:*
   N.Z. Cho, T. Downar
5. *Advanced Fuel & Core Design:*
   H.-D. Berger, S. Helmersson
6. *Criticality Safety:*
   M.C. Brady Raap, V. Rouyer
7. *NPP Transients:*
   K. Ivanov, Rizwan-uddin, E. Royer
8. *Actinide Management:*
   G. Rimpault, T. Taiwo
9. *Fast Reactor Design & Safety:*
   W. Maschek, T. Wei
10. *Research Reactors & Spallation Sources*:
    F. Gröschel, T. Kusunoki, S.C. Van der Marck
11. *Integral Experiments & Analysis:*
    P.D. Blaise, S. Okajima, L.V. Tocheny
12. *Nuclear Standards & Benchmarks:*
    D. Cokinos, E. Sartori
13. *Fuel & Materials Behavior:*
    Y. Guérin, W. Wiesenack
14. *Facilities for Safety Research:*
    P. D'hondt, S. Güntay
15. *Radiation Applications & Nuclear Safeguards:*
    B.L. Kirk, P. Vaz
16. *Nuclear Power & Sustainable Development:*
    S. Hirschberg, A. Worrall

Contents of the ANE Special Issue

- All 26 selected papers have been approved of, as regards presentation at the conference
- Ordering proposed for the journal is according to the numbering of the PHYSOR'08 tracks

And the PHYSOR'08 "Selected Papers" are …

Track 1: Nuclear Data

- *Paper 1*

  Actinide ENDF/B-VII cross section evaluations and validation testing

  M.B. Chadwick, R.C. Little , T. Kawano , P. Talou , D. Viera , M. Jandel , T.A. Bredeweg , M.C. White , A.P. Tonchev , J.A. Becker*

  **LANL, USA*

Track 2: Transport Theory

- *Paper 2*

  High resolution time integration for S_n radiation transport

  *G. Thoreson, R.G. McClarren, J.H. Chang**

LANL, USA

- *Paper 3*

  A posteriori error estimator and AMR for discrete ordinates nodal transport methods

  J.I. Duo, Y.Y. Azmy, L.T. Zikatanov*

Penn State, USA

Track 3: Monte Carlo Developments

- *Paper 4*

  The impact of ^{238}U resonance elastic scattering approximations on thermal reactor Doppler reactivity

  D. Lee, K. Smith, J. Rhodes*

**Studsvik, USA*

- *Paper 5*

  Improvement of the resonance scattering treatment in MCNP in view of HTR calculations

  B. Becker, R. Dagan, C.H.M. Broeders, G.H. Lohnert*

**FZK, Germany*

Track 4: Core Analysis Methods

- *Paper 6*

  Estimation of the fast neutron fluence at control rod tips using a 3-D diffusion/2-D transport calculation scheme

  H. Ferroukhi, J.-M. Hollard, M.A. Zimmermann, R. Chawla*

**PSI, Switzerland*

- *Paper 7*

  Modeling of LVRF critical experiments in ZED-2 using WIMS9A/PANTHER and MCNP5

  M.T. Sissaoui, P.A Carlson and J.R Lebenhaft*

**AECL, Canada*

Track 5: Advanced Fuel & Core Design

- *Paper 8*

  Burnable poison for reactivity management in a Very High Temperature Reactor

  C. K. Jo, Y. Kim, and J. M. Noh*

**KAERI, Korea*

Track 6: Criticality Safety

- *Paper 9*

  Validation of criticality calculation for systems with MOX powders

  T. Ivanova, V. Rouyer, Y. Rozhikhin, A. Tsiboulia*

**IRSN, France*

Track 7: NPP Transients

- *Paper 10*

  Single-phase mixing studies by means of a directly coupled CFD/system-code tool

  D. Bertolotto, A. Manera, B. Smith, H.-M. Prasser, R. Chawla*

**PSI/EPFL, Switzerland*

- *Paper 11*

  Application of TRACE/PARCS to BWR stability analysis

  Y. Xu, T. Downar, R. Walls, K. Ivanov, J. Staudenmeier, J. March-Lueba*

**U of Michigan, USA*

Track 8: Actinide Management

- *Paper 12*

  AP1000 core design with 50% MOX loading

  *R. J. Fetterman**

Westinghouse, USA

Track 9: Fast Reactor Design & Safety

- *Paper 13*

  Core design studies for a 1000 MW_{th} Advanced Burner Reactor

  T. K. Kim, W. S. Yang, C. Grandy and R. N. Hill*

**ANL, USA*

- *Paper 14*

  First 3-D calculation of core disruptive accident in a large-scale sodium-cooled fast reactor

  H. Yamano Y. Tobita, S. Fujita, W. Maschek*

**JAEA, Japan*

Track 10: Research Reactors & Spallation Sources

- *Paper 15*

  Improved Monte-Carlo-perturbation method for estimation of control rod worths in a research Reactor

  S. Kalcheva, E. Koonen*

**SCK•CEN, Belgium*

- *Paper 16*

  Neutronic characterization of the MEGAPIE target

  S. Panebianco,K. Berg, J.-C. David, M. Eid, U. Filges, F. Gröschel, A. Guertin, A. Y. Konobeyev, C. Latgé, S. Lemaire, S. Leray, A. Letourneaua, M. Lüthi, F. Michel-Sendis, S. Scazzic, G. Stankunas, N. Thiollière, L. Tobler, L. Zanini*

**CEA, France*

Track 11: Integral Experiments & Analysis

- *Paper 17*

  A global approach to the physics validation of simulation codes for future nuclear systems

  G. Palmiotti, M. Salvatores, G. Aliberti, H.Hiruta, R. McKnight, P. Oblozinsky, W. Yang*

**CEA, France*

- *Paper 18*

  Qualification of the APOLLO2.8 code package for the calculation of the fuel inventory and reactivity loss of UO_2 spent fuels in BWRs

  P. Leconte, J.-F. Vidal, D. Bernard, A. Santamarina, R. Eschbach, J.-P. Hudelot*

**CEA, France*

Track 12: Nuclear Standards & Benchmarks

- *Paper 19*

  TORT solutions to the NEA suite of benchmarks for 3D transport methods and codes over a range in parameter space

  *K.B. Bekar, Y.Y. Azmy**

**Penn State, USA*

- *Paper 20*

  Mixed-oxide (MOX) fuel performance benchmarks

  *L.J. Ott**, *T. Tverberg, E. Sartori*

**ORNL, USA*

Track 13: Fuel & Materials Behavior

- *Paper 21*

  Failure of high burnup fuels under reactivity-initiated accident conditions

  T. Sugiyama, M. Umeda, T. Fuketa, H. Sasajima, Y. Udagawa and F. Nagase*

**JAEA, Japan*

Track 14: Facilities for Safety Research

- *Paper 22*

  RELAP5 analysis of OECD/NEA ROSA Project experiment simulating a PWR small break LOCA with high-power natural circulation

  T. Takeda, H. Asaka, H. Nakamura*

**JAEA, Japan*

Track 15: Radiation Applications & Nuclear Safeguards

- *Paper 23*

  Sensitivity of photoneutron production to perturbations in cross-section data

  *S.D. Clarke, S.A. Pozzi, T.J. Downar, M. Flaska**

**U of Michigan, USA*

- *Paper 24*

  Delayed gamma studies from photo-fission of ^{237}Np for nuclear waste characterization

  P.M. Dighe, E. Berthoumieux, D. Doré, J.M. Laborie, X. Ledoux, V. Macary, S. Panebianco and D. Ridikas*

**CEA France*

Track 16: Nuclear Power & Sustainable Development

- *Paper 25*

  Economy of uranium resources in a three-component reactor fleet with mixed thorium/uranium fuel cycles

  *J.N. **Wilson***, A. Bidaud, N. Capellan, R. Chambon, S. David, P. Guillemin, E. Ivanov, A. Nuttin, O. Meplan*

**IPN, France*

- *Paper 26*

  Sustainability of electricity supply technology portfolio

  *S. Roth, **S. Hirschberg***, C. Bauer, P. Burgherr, R. Dones, T. Heck, W. Schenler*

**PSI, Switzerland*

M. B. Chadwick

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