



CHT'01: 2nd ICHMT SYMPOSIUM ON ADVANCES IN COMPUTATIONAL HEAT TRANSFER

Summary

CHT'01 took place in Palm Cove, Queensland, Australia on May 20-25, 2001. The symposium was co-sponsored by the International Centre for Heat and Mass Transfer and the CFD Research Laboratory, UNSW. It received the approval of (but no financial support from) AFTES.

CHT'01 was a scientific, social and financial success.

Technical program:

The programme featured 15 invited keynote papers and 149 contributed papers. The invited papers were:

Adaptive techniques and related issues in finite element modeling of heat and fluid flow. *G F Carey*

Application of TCL strategy in engineering and environmental flows. *T J Craft & B E Launder*

Buoyancy-driven convection of a contained fluid with unsteady boundary conditions. *H S Kwak & J M Hyun*



Challenges in 'RANS' modelling of turbulent thermal and magnetic convection. *K Hanjalic*

Computational modeling of flow and heat transfer in industrial applications. *S V Patankar*

Direct design of shape. *H Ashrafizadeh, G D Raithby & G D Stubble*

Effect of the thermal wall boundary conditions on scalar transport in clear and particle laden turbulent boundary layer. *G Hetsroni, C Li, A Mosyak, I Tiselj & E Pogrebnjak*

Expanded use of CFD in the chemical process industry. *D Choudury, M S Engelman and L Marshall*



Heat transfer and fluid dynamics phenomena in molten droplet-surface interactions. *D Poulikakos*

Multi-scale computational heat transfer with moving solidification boundaries. *W Shyy & H S Udaykumar*

Natural and mixed convection of liquid metals in a magnetic field. *H Ozoe*

Parallel processing of CFD and radiative heat transfer. *M P Owens, I P Jones & P W Guilbert*

Probability density function approach for turbulent hydrodynamics and heat and mass transfer in two-phase dispersed flows. *I V Derevich*

Review of China's computational heat transfer: a summary of selected papers presented in the China National CHT conferences. *Z Zhang*

The time dimension, computational algorithms, and heat transfer computations *K K Tamma, X Zhou & D Sha.*



At the last minute, two invited speakers (Engelman and Hetsroni) were forced to cancel their participation and sent co-authors or colleagues to present their papers. One speaker (Derevich)

announced at the last minute that he would not be coming; and one (Shyy) did not get a visa and was not allowed to board his flight!

All other papers were given as poster presentations.

Validation exercise:

A special session of the symposium was devoted to validation of physical and computational models, codes and solutions. Three bench mark problems were specified, for which good quality experimental and/or computational results were available. Computational solutions to these problems were invited. The problems were:

1. natural convection in an air-filled cubical cavity,
2. directional solidification of succinonitrile in a horizontal Bridgman apparatus, and
3. confined and submerged liquid jet impingement heat transfer.

No contributions were received for problems 2 and 3; they evidently seemed too formidable. A total of ten contributions was received for problem 1 – with nine appearing in the proceedings, and one last minute poster. A paper comparing and analysing the contributions was published.

Proceedings:

The Proceedings were printed in Australia and published by Begell House. They were distributed at the Symposium. The Proceedings comprise 1400 pages in two volumes, and include a table of contents, subject index and author index. A CD-ROM was also produced. Delegates were given the choice of receiving the books, the CD or both.

In addition, expanded versions of selected papers were published in special issues of *Numerical Heat Transfer A* and *B* and *International Journal of Heat and Fluid Flow*.

Review of Contributed Papers:

All contributed papers were peer reviewed. International Scientific Committee members were extremely helpful in doing, or arranging to be done, the reviewing of papers from their part of the world.

Publicity:

Extensive publicity was undertaken via

- Email – a list of approximately 9000 addresses has been compiled from a variety of sources (including Professor Arinç), almost all in heat transfer or related areas. This list, which is regularly being updated and amended, has been used twice;
- WWW – a multi-page site (<http://cht01.mech.unsw.edu.au>) was established in late 1999 and received about 20,000 “hits” since a counter was initialised on December 22, 1999;
- Listing on the web sites of some ISC members and keynote speakers, and of other, related conferences;
- Mail – an excellent leaflet was produced by Professor Arinç, and multiple copies have been sent to International Scientific Committee members and invited Keynote and Special lecturers, as well as to Professor Arinç’s extensive mailing list;
- Advertisements in appropriate journals, including *Communications in Heat and Mass Transfer*; *Numerical Heat Transfer*, and conference lists in journals;



- On-line lists of conferences, and on-line newsletters in relevant areas.

Intending delegates were asked to complete and return a “pre-registration form” which was available at the web site and in the leaflet. Approximately 400 people pre-registered and 178 people attended. The distribution among countries of the delegates was:

Australia	27	Belgium	1	Brazil	1
Canada	9	Finland	1	France	14
Germany	9	India	4	Israel	2
Italy	7	Japan	19	Korea	9
Lithuania	1	Macedonia	1	Mexico	1
New Zealand	2	P.R. of China	6	Poland	4
Portugal	3	Russia	2	Singapore	1
South Africa	1	Sweden	4	Switzerland	3
Taiwan R.O.C.	2	Thailand	2	The Netherlands	2
Ukraine	1	UK	10	USA	29



Location:

Accommodation, all technical sessions and the Welcome Reception were at the Novotel Palm Cove Resort. Located near a beautiful palm-fringed beach 20 km north of Cairns International Airport, the Novotel Resort is only a short boat trip to the Great Barrier Reef, one of the natural wonders of the world, and within easy reach of the Atherton Tablelands, a dense mosaic of unique plant and animal habitats, rainforests, rivers, lakes and waterfalls, and of the Daintree Forest, the second largest virgin tract of rainforest after the Amazon rainforest in South America (and older than it). Keynote lectures were in a large lecture hall in the hotel’s Conference Centre, the posters were erected in the next room (with plenty of space for delegates to sit, discuss and take coffee), and lunches and coffee were served on an adjacent balcony overlooking the resort’s golf course. This proved to be a highly successful venue. Delegates were extremely enthusiastic about the facilities for the technical sessions, the accommodation and the ambience of the environment.

Excursions: a range of excursions to places of interest in the region was offered throughout the week for accompanying persons, and on Wednesday afternoon for delegates and accompanying persons. There were well attended and well received. A swimming/snorkelling/ diving visit to the Great Barrier Reef was arranged for the Saturday following the end of the symposium. About half the delegates stayed to enjoy the day (and, incidentally, to attend the final Friday session!).

Symposium dinner: This was held at the *Rainforest Habitat*, a wildlife sanctuary a short distance north of the hotel, and was universally applauded as a great success. The Rainforest Habitat, with three separate exhibits of flora and fauna – rain forest, wetlands and grasslands – is a unique venue for private functions: cocktails on the main walkway starting at 5.00 pm, a tour of the site, then dinner in the covered kiosk area. The journey through the Habitat allowed visitors to encounter over 140 species of wildlife including birds, kangaroos, wallabies, koalas and crocodiles. Guests were delighted to be able to feed kangaroos and wallabies (but not crocodiles!).



Photographs: A large number of photographs taken by Eddie Leonardi have been placed on our web site (<http://cht01.mech.unsw.edu.au>).