

Please send this report to the Secretary of the European Mechanics Council, Professor Bengt Lundberg, Dept of Mechanical Engineering, Luleå University of Technology, S-951 87 Luleå, Sweden, within one month after the Colloquium.

General

Euromech Colloquium No: 355

Title: *Interfacial Instability*

Co-Chairmen: *Chairman: J.-M. Chomaz, Co-Chairman: E.J. Hopfinger*

Place and country: *Ecole Polytechnique 91128 Palaiseau France*

Dates: *10 sept. 96 - 13 sept. 96*

Finance

| | | | | |
|--------------------|----------|---------|------------|-----------------|
| | | 1200 FF | non member | including lunch |
| The conference fee | included | 1000 FF | member | |
| | | 500 FF | student | |

Funding: *93 000 FF from institutions, 45 000 FF from the registration fee (note that as 20.6% overhead is taken by the taxes)*

Accommodation (type and cost): *Student room 120 FF/night with BF.*

Meals: *lunches were included, Wednesday reception included 45 FF for dinner; 280 FF for the Banquet (Thursday)*

Participation

Total number of participants: *80*

** Nb on 14 persons cancel at the last minute or do not show up - 7 have been replaced by French people on the waiting list at the very last moment.*

Distribution of participants by country:

| Code | Country | Number | Code | Country | Number |
|------|----------------|---------------------------------|------|--------------|--------|
| A | Austria | _____ | I | Italy | 5 |
| B | Belgium | 2 | IRL | Ireland | _____ |
| BG | Bulgaria | _____ | N | Norway | _____ |
| CH | Switzerland | _____ | NL | Netherlands | 6 |
| CS | Czechoslovakia | _____ | P | Portugal | _____ |
| D | Germany | 4 | PL | Poland | 1 |
| DK | Denmark | _____ | R | Rumania | _____ |
| E | Spain | 2 | S | Sweden | 2 |
| F | France | 33 including the organizers (9) | SF | Finland | _____ |
| GB | Great Britain | 9 | YU | Yugoslavia | _____ |
| GR | Greece | _____ | SU | Soviet Union | 3 |
| H | Hungary | _____ | - | Others USA | 11 |
| | | | | Israel | 2 |

Is there need of another colloquium on the same subject? Which year?

Report on Euromech 355, Interfacial Instability.

The Euromech Colloquium 355 on Interfacial Instabilities, held from September 11 to 13 in Paris, attracted considerable attention. A total of 57 papers were presented (46 oral presentations, including 6 general conferences, and 11 posters). It was clearly a timely topic for such a specialised meeting. Timely because much progress has been made recently in this area and because there has not been such a well focused meeting during recent years.

The interest in interfacial instabilities is motivated by a wide range of applications and papers presented at the meeting included applications such as film coating, wetting, ink jet printing, pipeline lubrication, printers instabilities, spray formation in combustion chambers. These applications raise a number of interesting and difficult fundamental questions which were pointed out and identified during the meeting. The papers presented were generally of high scientific quality and the main topics were introduced by general lectures delivered by:

| | |
|-----------------|--|
| T.A Kowalesky | “ Liquid jets and drops ” |
| G. Tryggvason , | “ Drops and bubbles in shear flows ” |
| S.H. Davies, | “ Singular behaviour in viscous films ” |
| C. Dopazo, | “ Liquid jet break-up and atomisation by coflowing gas ” |
| S. Zaleski, | “ Numerical methods for interfaces ” |
| A. Cartellier, | “ Experimental methods for interface ” |

Numerical simulations are now capable of tracking the interface displacement until pinching. Substantial advances were also demonstrated during the colloquium on liquid bridges, moving contact lines, thin film destabilization by high velocity gas streams, conditions of absolute instability of liquid jets and liquid jet atomisation.

This was the first meeting organised, with the new French administrative rules, at the École Polytechnique which made the organisation sometimes more difficult than it should have. Besides the announcement in Euromech Journal, the publicity of the Colloquium has been made by mailing more than 500 fliers and by a specific world wide web page. A total close to 2 000 different emails have been exchanged. The flexibility of the internet world wide web has been fully used with a preliminary programme with summary of the talks, graphics and images accessible since the beginning of August 1996. This WWW node will continue to serve to the interfacial instability community as the official proceeding of abstracts (with illustrations) of the colloquium and links to the home page of the participant will keep being edited till 2006. During the colloquium everything went smoothly and the participants could

profit from the spacious and comfortable conditions provided by the École Polytechnique. The official flags from the different countries were displayed outside the buildings as a gesture of welcome of the participants. After the first working day on Wednesday there was a friendly reception and the conference dinner on Thursday was held at the Eiffel Tower (only Paris can offer this kind of a treat).

The registration fee was 1000 FF. for Euromech members, 1200 FF. for non Euromech members and 500 FF. for students including lunches. The number of participants was 80, with 6 Invited Speakers, 4 Invited Eastern European, 9 Euromech members, 32 non Euromech members, 14 PhD students, 6 participants invited by funding agencies and 9 persons from the local organisation committee. The Euromech overhead charge has not been applied to students, Invited Speakers, Invited Eastern European, participants invited by funding agencies and organising persons. Funding has been obtained from École Polytechnique (20 KFF.), CNRS SPI (15 KFF.), DRET (16 KFF.), Ministère de l'Éducation Nationale - Acces - (17 KFF.), IFREMER (15 KFF.), GDR MFN (10 KFF.). The invited speakers and participants from Eastern European countries had their registration fee waved and their travel and local expenses covered. Three participants from Russia and one from Poland were fully supported.

Interfacial Instabilities is clearly a topic on which another Euromech Colloquium should be held in the near future.

October 10, 1996, J.-M. Chomaz et E.J. Hopfinger