Professor G K Batchelor
Dept of Applied Maths & Theoretical Physics
Silver Street
CAMBRIDGE CB3 9EW

12 July 1990

Dear Professor Batchelor

EUROMECH 262
Sand Transport in Rivers, Estuaries and the Sea

The above colloquium took place 26-29 June 1990, and I am happy to say, was a very successful event. It was attended by 60 participants from 16 different countries. Of these, 20 were from the UK, 30 from the rest of Europe, and 20 from the rest of the world. A list is enclosed. As a gesture of goodwill towards the newly emerged East European democracies, we were happy to waive the registration fee for the delegates from Poland and Bulgaria.

A total of 36 scientific presentations were given in the 4 day period, and these stimulated lively discussions. We were careful to ensure that there were opportunities for individual discussion as well as the group discussions, by allowing ample time for coffee/tea breaks and lunch, and I am sure this was welcomed by the participants. Many of the papers presented described very significant advances in our understanding of sand transport, both through experimental and theoretical approaches. The marine field was particularly strong in this respect. It was encouraging to see evidence of "convergent thinking' emerging in both the presentations and the discussions. Seven themes seemed to be particularly energetically discussed, as detailed on the attached sheet. In some of these the meeting produced a body of new evidence which now requires collation and assimilation: in others there were more questions than answers at present.

The accommodation of participants in The Queens's College Oxford worked well and was taken up by all except 8 of the participants. All the practical arrangements such as transport to PR, catering, and lecture theatre facilities went smoothly. Chairman of sessions were chosen from a wide range of countries, and all performed a valuable role in guiding the discussions while keeping an eye on the time schedule.

The participants were keen to have a permanent record of the papers in bound Proceedings, and we will be asking them to submit 6-8 page camera-ready papers by 1 October. This will also allow them to incorporate new ideas or points of clarification arising from the discussion. The Proceedings will be published by A A Balkema, who have published previous proceedings of Euromech Colloquia on sediment transport theories, and who will undertake all the financial risk and/or gain.

Continued/.....

Professor D M Hatcher 12 July 1988

The finances of the colloquium itself have not yet been finally resolved as some of the bills have still to be received, but it looks at present as though we will have just about covered our costs.

At the closure of the colloquium an offer was kindly made by Professeur Delhaye of the Universite du Havre to host another Euromech Colloquium with a sediment transport theme in two or three years time, and I have passed information to him on how to apply to the European Mechanics Committee.

I would be grateful if you would pass this letter to the Committee as the final report on Euromech 247, and I would like to thank you for your help throughout.

Yours sincerely

R L Soulsby
Chairman

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EUROMECH 262
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26 - 29 June 1990, Wallingford, England

MAIN DISCUSSION THEMES

1. Field, laboratory and theoretical evidence were produced for the size of the previously neglected "wave-related" velocity-concentration covariance contribution to wave-plus-current sediment transport, compared with the "current-related" contribution. The ratio of these two contributions was variously estimated between +0.001 and -2, depending on input conditions.

2. Measurements of bedload transport obtained from ripple migration rates appeared to underestimate by about a factor of 2 the predicted values, but it was not clear if this was due to grains "bypassing" the ripples, or to deficiencies in present theories.

3. The handling of sediment-induced modification of velocity profiles fell into two camps: a phenomenological approach based on semi-empirical curve fitting to data, and a dynamical approach based on density-stratification effects but without much appeal to data.

4. Two distinct mechanisms were put forward for the formation of dunes and bars: a mathematical stability analysis, and a turbulent bursting theory. It was surmised that the two were not necessarily incompatible.

5. The hydrodynamics and sediment dynamics of mature dunes, sandwaves, and sloping beds had been measured in detailed laboratory and field experiments. This body of information now requires digestion and interpretation.

6. Data and theory for sheet flow of sand under both waves and currents were presented. This subject is widely recognised as important but is still relatively little researched.

7. Various approaches to the treatmen t of mixtures of sediment grain-sizes were presented. This problem invariably arises in practical applications with natural sediments, but attracts relatively little research attention.

R L SOULSBY
July 1990

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LIST OF DELEGATES

Dr P Wright	MOD Hydrographic Office	UK
Prof S S Y Wang	University of Mississippi	USA
Dr J S Ribberink	Delft Hydraulics	Netherlands
Dr J J Williams	Proudman Oceanographic Laboratory	UK
Dr J Krohn	GKSS Research Centre Geesthacht	F R Germany
Mr B Latteux	Electricite de France	France
Mr P Chee	Electricite de France	France
Mr E Sumi	National Research Institute for Pollution and Resources	Japan
Dr P D Thorne	Proudman Oceanographic Laboratory	UK
Mr F H Weiss	Bayer Landesamt Fur Wasserwirtschaft	F R Germany
Dr M O Green	University of Cambridge	UK
Prof J Fredsoe	Technical University of Denmark	Denmark
Dr L C van Rijn	Delft Hydraulics	Netherlands
Dr R A Pantin	University of Leeds	UK
Mr V Rey	Universite de Provence	France
Mr M Colombini	University of Genoa	Italy
Dr M Tubino	University of Genoa	Italy
Prof P Blondeaux	University of Genoa	Italy
Prof G Seminara	University of Genoa	Italy
Dr G Vittori	University of Genoa	Italy
Dr R Deigaard	Technical University of Denmark	Denmark
Prof S R McLean	University of California	USA
Prof L Montefusco	University of Florence	Italy
Dr D Lyn	University of Karlsruhe	F R Germany
Prof O Nyrhaug	Norwegian Institute of Technology	Norway
Mr R B Nairn	Imperial College of Science and Technology	UK
Mr A Valiani	University of Florence	Italy
Mr H Tanaka	Tohoku University	Japan
Prof M L Vajda	Israel Institute of Technology, Technion	Israel
Prof F Belorgey	Universite du Havre	France
Mr A Al-Salem	Delft Hydraulics	Netherlands
Dr C E Vincent	University of East Anglia	UK
Mr D M Hanes	University of Florida	USA
Dr R R Simons	University College, London	UK
Prof N S Kapdasli	Technical University of Istanbul	Turkey
Mr A M Talmon	Delft University of Technology	Netherlands
Prof I R McCave	University of Cambridge	UK
Dr F C M van der Knaap	Delft Hydraulics	Netherlands
Dr J Nicholson	University of Liverpool	UK
Dr N Lhuissier	Universite du Havre	France

Dr A Lasek	Centre National de la Recherche Scientifique	France
Mr R L Soulsby	Hydraulics Research Ltd	UK
Dr R Bettess	Hydraulics Research Ltd	UK
Dr G V Miles	Hydraulics Research Ltd	UK
Mr R J S Whitehouse	Hydraulics Research Ltd	UK
Prof M S Yalin	Queen's University, Kingston	Canada
Ms A M da Silva	Queen's University, Kingston	Canada
Prof A Temperville	Institut Mecanique de Grenoble	France
Mr M Vetter	Bundesanstalt fur Gewasserkunde	F R Germany
Prof D A Huntley	Polytechnic South West	UK
Mr J M S Rocha	Laboratorio Nacional de Engenharia Civil (LENEC)	Portugal
Mr J S Schoonees	CSIR	S Africa
Dr A G Davies	University College of North Wales	UK
Ms P E Murray	University College of North Wales	UK
Prof D M McDowell	Consultant	UK
Ms J H Watts	Hydraulics Research Ltd	UK
Dr D J Needham	University of East Anglia	UK
Mr L M Kaczmarek	Institute of Hydroengineering, Gdansk	Poland
Mr J Oelerich	Technical University of Braunschweig	F R Germany
Mr M D Eisenhauer	University of Karlsruhe	F R Germany
Prof M K Mittal	University of Roorkee	India
Mr Labadie	Electricite de France	France
Prof A Lamberti	University of Bologna	Italy
Mr G Gergov	Institute of Hydrology and Methodology	Bulgaria
Mr J Hardisty	University of Hull	UK