

Biogeochemistry of the Arabian Sea: Synthesis & Modelling

18-20th January 1999,

Bangalore, India

PROGRAMME

MONDAY 18TH JANUARY

Session 1: 08:30 – 10:00 Chair: V.K. Gaur

INTRODUCTIONS

08:30 Welcome
R. Singh

08:35 Background of the Symposium
S. Sathyendranath

08:40 Remarks from the Chairman JGOFS India
V. K. Gaur

08:45 Remarks from the Chairman JGOFS Indian Ocean Committee
P.H. Burkill,

08:55 Inaugural Address
R.S. Mashelkar

09:20 **Keynote 1:** JGOFS-India Programme: an Overview.
S. Krishnaswami

09:55 Vote of Thanks
P.S. Swathi

10:00 COFFEE

Session 2: 10:40 – 13:00 Chair: Shubha Sathyendranath

OVERVIEWS

10:40 Physical forcing and biological productivity in the Arabian Sea.
S.P. Kumar, M. Madhupratap, P.M. Muraleedharan & M. Gauns.

11:00 The 1994-1996 U.S. Arabian Sea Expedition: an integrated, interdisciplinary investigation of the response of the northwestern Indian Ocean to monsoonal forcing.
S. L. Smith, L.A. Codispoti, J.M. Morrison, R.T. Barber

11:20 Multidisciplinary observations in the NW Indian Ocean, Strait of Hormuz and Arabian Sea.
H.S.J Roe, J.T. Allen, N. Crisp, G. Griffiths, P. Herring, A. Mustard, R. Pascal & D. Smeed.

AIR-SEA EXCHANGE

- 11:40 NO₃ and ²¹⁰Pb distribution in aerosols and their deposition fluxes to the surface Arabian Sea.
M.M Sarin, R. Rengarajan & S.Krishnaswami
- 12:00 Comparison of anthropogenic CO₂ concentration in seawater across the Arabian Sea and the Bay of Bengal.
C. Goyet, C. Coatanoan & G. Eiseid.
- 12:20 Controls of pCO₂ and its air-water exchange in the Arabian Sea.
V.V.S.S. Sarma & M. Dileep Kumar
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12:40 LUNCHEON

Session 3: 14:00 – 16:00 Chair: Sharon Smith

POSTER PAPERS

- 14:00 Lead authors A-K to man their posters
- 14:40 Lead authors L-Z to man their posters
- 15:20 Tea (within poster session)
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Session 4: 16:00- 17:20 Chair: Trevor Platt

REMOTE SENSING

- 16:00 Features of the Upwelling and Open Ocean Circulation in the Arabian Sea Observed During 1993-1995.
W. Shi, J. M. Morrison, E. Böhm & V. Manghnani.
- 16:20 Effect of Southwest Monsoon on Brightness Temperature of Arabian Sea and Neighbouring Region.
R. P. Singh & N. C. Mishra.

HYDROGRAPHY & NUTRIENTS

- 16:40 Seasonal variation of hydrographic and nutrient fields during the U.S. JGOFS Arabian Sea Process Study.
J. Morrison, L.A. Codispoti, S. Gaurin, B. Jones, V. Manghnani & Z. Zheng
- 17:00 The NE Monsoon's impact on mixing, phytoplankton biomass and nutrient cycling in the Arabian Sea.
J. Wiggert, B.H. Jones, T.D. Dickey, K. Brink, R.A. Weller, J. Marra, & L.A. Codispoti
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TUESDAY 19TH JANUARY

Session 5: 08:40-10:00. Chair: Louisa Watts

PHYTOPLANKTON

- 08:40 **Keynote 2** – Offshore phytoplankton pigment for 1978-1986 in the Arabian Sea and for 1978 -1981 in the Laccadive Sea from the Coastal Zone Color Scanner.
K. Banse
- 09:20 Southwest monsoon in the Western Arabian Sea: phytoplankton dynamics.
K. von Bröckel, & C. Sellmer
- 09:40 What controls enhanced production during upwelling in the Arabian Sea?
P.H. Burkill, E. Edwards, & SONNE 120 Cruise Team.
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10:00 COFFEE

Session 6: 10:40-13:00. Chair: Roger Hanson

BACTERIA

- 10:40 Bacterial Relationship with Organic Carbon in the Arabian Sea.
N. Ramaiah, V.V.S. Sarma, M. Gauns, M. Dileep Kumar, & M. Madhupratap
- 11:00 Bacterial Utilisation of Primary Production-C in the Indian Ocean: Results and Principles.
H.-G. Hoppe & S. Ullrich

ZOOPLANKTON

- 11:20 On the paradox of high mesozooplankton biomass in the western Arabian Sea throughout the year: re-analysis of IIOE data and comparison with newer data.
M. Baars

EXPORT

- 11:40 ²³⁴Th scavenging and particle export from the upper Arabian Sea.
M.M. Sarin, R. Rengarajan & V. Ramaswamy
- 12:00 Sedimentary organic matter distribution and preservation controls in the Arabian Sea: Pakistan Margin. *G.L. Cowie, S.E. Calvert, T.F. Pedersen, R. Keil, H. Schulz & U. von Rad*

OXYGEN MINIMUM ZONE

- 12:20 The oxygen minimum zone in the Arabian Sea during 1995.
J.M. Morrison, L.A. Codispoti, S. L. Smith, K. Wishner, C. Flagg, W.D. Gardner, S. Gaurin, S.W.A. Naqvi, V. Manghnani, L. Prosperiey & J.S. Gundersen
- 12:40 Nitrogen isotopic studies in the suboxic Arabian Sea.
S.W.A. Naqvi, T Yoshinari, J.A. Brandes, A.H. Devol, D.A. Jayakumar, P.V. Narvekar, M.A. Altabet & L.A. Codispoti
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12:40 LUNCHEON

Session 7: 14:00-16:00 Chair: Iris Kriest

OCEAN COLOUR, MODELLING & BIOGEOCHEMICAL CYCLES

- 14:00 Analysis of ocean-colour data of waters around Sri Lanka obtained from the Coastal Zone Colour Scanner (CZCS).
K.K.A.S Yapa
- 14:20 Bio-optical modelling in the Arabian Sea.
W. Breves & R. Reuter.
- 14:40 Radiative transfer model for ocean-atmosphere system: application to PAR computation.
E. Devred
- 15:00 Functions used in biological model and their influences on simulations.
H Gao & W. Sun
- 15:20 Evaluation of Marine Ecosystem Model simulations using Satellite Chlorophyll data.
M.K. Sharada & K.S. Yajnik
- 15:40 Modelling primary production in the subtropical North Atlantic.
H. A. Bouman, B.D. Irwin, S. Sathyendranath, T. Platt, M.R. Wernand, & G.W. Kraay
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16:00 TEA

WEDNESDAY 20TH JANUARY

Session 8: 08:20-10:40. Chair: K S Yajnik

MODELLING & BIOGEOCHEMICAL CYCLES

- 08:20 A model for phytoplankton aggregation.
I. Kriest & G.T. Evans
- 08:40 Modelling new production in the northwest Indian Ocean region.
L.J. Watts, S. Sathyendranath, C. Caverhill, H. Maass, T. Platt & N.J.P. Owens
- 09:00 The Arabian Sea Carbon Cycle, a Vertical Flux Modelling Study.
J.C. Blackford & P.H. Burkil
- 09:20 Formulation of plankton models--how can dynamical-systems approach help us?
A.M. Edwards
- 09:40 A coupled physical-biological-chemical model for the Indian Ocean.
P.S. Swathi, M.K. Sharada & K.S. Yajnik

10:00 Seasonal dynamics and biological productivity in the Arabian Sea as simulated by a 3-D ecosystem model.

V.A. Ryabchenko

10:20 The oceanic nitrogen cycle and global change: an idea whose time has come?

L.A. Codispoti

10:40 COFFEE

Session 9: 11:00-12:40 *Chair: Peter Burkill*

OPEN DISCUSSION & CONCLUSION

11:00 What lessons have been learnt about Arabian Sea Biogeochemistry?

12:30 Concluding Statements

12:40 LUNCHEON
