

BIOGRAPHICAL SKETCH: MAX D. COON

NorthWest Research Associates, Inc.
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a. Professional Preparation

Ph.D., University of Michigan, College of Engineering, 1965
M.S.E., University of Michigan, College of Engineering, 1963
B.S.E., University of Michigan, College of Engineering, 1960

b. Appointments

Senior Research Scientist, NorthWest Research Associates, Inc., 1993-Present
Visiting Professor, Naval Postgraduate School, 2002-2003
Visiting Professor, Technical University of Denmark, 1998-1999
Senior Research Scientist, Williamson and Associates, Inc., 1991 - 1993
Vice President, BDM International, Inc., 1986 - 1991
President, Coon & Associates, 1981 - 1986
Vice President, Flow Research Company, 1978 - 1981
Associate Professor, University of Washington, 1967 - 1978
Lecturer, University of Manchester, 1965 - 1968
Teaching Fellow, University of Michigan, 1961 - 1965
Engineer, General Motors, 1960 - 1961

c. Publications

Five Most Closely Related Publications

- M.D. Coon, G.S. Knoke, and D.C. Echert, 1992, "Anisotropic Pack Ice Constitutive Law," in *IAHR 92, Proceedings of the 11th International Ice Symposium*, Banff, Alberta, June 15-19.
- M.D. Coon, R.G. Onstott, and D.C. Echert, 1997, "Microwave Response to Stress in Sea Ice - A Report on Initial Field Conditions," *Cold Regions Science and Technology*.
- M.D. Coon, D.C. Echert, and G.S. Knoke, 1998, "Stress Validation of a Failure (Yield) Surface for Pack Ice," in *Ice in Surface Waters, Proceedings of the 14th International Symposium on Ice*, Editor: Hung Tao Shen.
- M.D. Coon, G.S. Knoke, D.C. Echert, and R.S. Pritchard, 1998, "The Architecture of an Anisotropic Elastic-Plastic Sea Ice Mechanics Constitutive Law," *Journal Geophysical Research*, 103(C10), 21,915 - 21,925.
- M.D. Coon, and Leif Toudal, 2001, "Interannual Variability of the Sea-Ice-Induced Salt Flux in the Greenland Sea," *Annals of Glaciology* 33, 385-390.

Five Other Significant Publications

- M.D. Coon, G.S. Knoke, and P.A. Lau, 1989, "Time Dependent Effects on Ridge Initiation in Sea Ice Leads," *OCEANS '89 Proceedings*, IEEE Publication, pp. 1298-1303.
- M.D. Coon, G. S. Knoke, 1993. "Phenomenological Constitutive Model for Columnar Ice." The 3rd International Offshore and Polar Engineering Conference.
- M.D. Coon, G. S. Knoke, D.C. Echert, 1995, "Force-Displacement Measurements of a First-Year Pressure Ridge Keel," *AMD 207 (Ice Mechanics-1995)*, pp. 239-254.

- R. Greeley, R. Sullivan, M.D. Coon, P.E. Geissler, B.R. Tufts, J.W. Head III, R.T. Pappalardo, and J.M. Moore, 1998, "Terrestrial Sea Ice Morphology: Considerations for Europa," *Icarus*, 135, 25-40.
- T. Maksym, L. Toudal, M.D. Coon, M.L. Van Woert, 2003. "Operational Modeling of the Autumn Ice Advance in the Barents Sea," in press *IAHR*.

d. Background

Dr. Coon has taught Civil and Mechanical Engineering at the Universities of Michigan, Manchester (in England), and Washington (in Seattle). At these universities, the teaching background included elasticity, plasticity, dynamics, strength of materials, and plates and shells. In addition to supervising graduate students, Dr. Coon also developed a series of television lectures on the strength of materials. Seminar presentations have been made at various universities in the United States, Canada, China, Russia, and England. Also, through Coon & Associates, Dr. Coon developed three short courses which have been presented to the off-shore and oil industries at various locations in the United States and Canada.

Dr. Coon was Research Coordinator for the Arctic Ice Dynamics Joint Experiment (AIDJEX) program, and served as chief scientist for ONR's Coordinated Eastern Arctic Research Experiment (CEAREX) and Sea Ice mechanics Initiative (SIMI) research programs, and served on the organizing committee for ONR's LEADDEX program. Dr. Coon has assisted in the preparation of program plans for various U.S. Government agencies, including a review of polar programs and climate research, a study done for the National Academy of Sciences, and the preparation of a document outlining research in Sea Ice Mechanics for the National Research Council through the Marine Board of the National Academy of Sciences and Engineering. Dr. Coon visited Russia in 1991 to participate in a joint U.S. and Russian Ice Mechanics workshop sponsored by the National Academy of Sciences. Also, he visited China in 1997 to participate in the Joint U.S. and China Workshop on Natural Disaster Reduction and Mitigation. He visited the Department of Electromagnetic Systems of the Technical University of Denmark from September 1998 to March 1999, where he worked on the development of new sea ice dynamics models.

On this project, Dr. Coon will provide overall insight concerning the general behavior of sea ice, ridge and lead formation, opening and closing of leads and the constitutive behavior of sea ice. In particular, he will provide a detailed anisotropic, elastic-plastic constitutive model for sea ice and guide the research concerning the connection between the continuum description of sea ice with failure.