

Katherine H. Kim, Ph.D.

Senior Research Scientist

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RESEARCH INTERESTS

Underwater acoustics, signal processing, marine mammal acoustics, acoustical oceanography, ocean engineering

EDUCATION

Ph.D. , Electrical Engineering (Applied Ocean Sciences)

University of California, San Diego

June 2002

M.S., Electrical Engineering (Electronic Circuits and Systems)

University of California, San Diego

June 1993

B.S., Physics

University of Illinois, Urbana-Champaign

June 1991

EMPLOYMENT

Senior Research Scientist

Greeneridge Sciences, Inc., San Diego, CA

June 2008 – Present

Senior Scientist

Heat, Light, & Sound Research, Inc., La Jolla, CA

July 2005 – June 2008

Postgraduate Research Oceanographer

Marine Physical Laboratory, Scripps Institution of Oceanography, UCSD

July 2002 – June 2005

Staff Research Associate II

Marine Physical Laboratory, Scripps Institution of Oceanography, UCSD

April 2001 – June 2002

Programmer/Analyst II

Marine Physical Laboratory, Scripps Institution of Oceanography, UCSD

April 2000 – January 2001

Graduate Researcher

Marine Physical Laboratory, Scripps Institution of Oceanography, UCSD

September 1993 – December 1995, June 1996 – March 1999

Computer Consultant

Self-employed

December 1995 – Present

Teaching Assistant

Department of Electrical Engineering, UCSD

September 1995 – December 1995

Department of Physics, UCSD

November 1992 – June 1993

Audio Engineer

Department of Music, UCSD

September 1991 – September 1992

Undergraduate Research Assistant

CERL Sound Group, Computer-based Education Research Lab, UIUC

June 1990 – June 1991

PUBLICATIONS

- A. Thode, M. Winsor, M. Howard, J. Diebold, B. Mate, K. H. Kim, and J. Newcomb, "Estimates of chronic exposure levels of sperm whales (*Physeter macrocephalus*) to airguns in the Gulf of Mexico," J. Acoust. Soc. Am. [in progress]
- K. H. Kim and W. S. Hodgkiss, "Source motion effects on CSDM eigenspectra and impact on MVDR matched field processing," J. Acoust. Soc. Am. [in progress]
- K. H. Kim and W. S. Hodgkiss, "Influence of MVDR diagonal loading on target detectability in matched field processing," IEEE J. Oceanic Eng. [in progress]
- K. H. Kim and W. S. Hodgkiss, "Source detection and localization performance of matched field processors in a real ocean environment," J. Acoust. Soc. Am. [in progress]
- K. H. Kim, M. B. Porter, M. Siderius, and P. Hursky, "The HLS AComms Advisor: 2007 Testing in Dabob Bay and AUVFest," HLS Tech. Mem. HLS-2008-01, HLS Research, Inc., La Jolla, CA (2008).
- K. H. Kim, M. Siderius, and M. B. Porter, "The HLS AComms Advisor," HLS Tech. Mem. HLS-2007-01, HLS Research, Inc., La Jolla, CA (2007).
- M. B. Porter, K. H. Kim, M. Siderius, M. Badiy, T. Folegot, and the KauaiEx Group, "Ocean acoustic tomography using high-frequency systems," J. Acoust. Soc. Am. **120**, 3002 (2006).
- K. H. Kim, P. Hursky, M. B. Porter, J. A. Hildebrand, E. E. Henderson, and S. M. Wiggins, "Automated passive acoustic tracking of dolphins in free-ranging pods," Proc. of the Eighth European Conference on Underwater Acoustics, Eds. S. Jesus and O. Rodriguez, Carvoeiro, Portugal, 329–334 (2006).
- K. H. Kim, P. Hursky, M. B. Porter, J. A. Hildebrand, E. E. Henderson, and S. M. Wiggins, "Dolphin pods of the Southern California Offshore Range: Localization and behavior," J. Acoust. Soc. Am. **119**, 3403 (2006).
- A. Thode and K. H. Kim, "Multiple-order derivatives of a waveguide acoustic field with respect to sound speed, density, and frequency," J. Acoust. Soc. Am. **116**, 3370–3383 (2004).
- P. Gerstoft, K. H. Kim, D. Battle, W. A. Kuperman, W. S. Hodgkiss, and H. C. Song, "Nonexhaustive array processing," J. Acoust. Soc. Am. **113**, 2264 (2003).
- K. H. Kim and W. S. Hodgkiss, "Source motion effects on matched field processing," J. Acoust. Soc. Am. **112**, 2223 (2002).
- K. H. Kim, "Source detection and localization performance of matched field processors in a real and uncertain, shallow water, ocean environment," Ph.D. thesis, University of California, San Diego, La Jolla, CA (2002).
- K. H. Kim and W. S. Hodgkiss, "Comparison of robust matched-field processing algorithms in a real, shallow water environment," J. Acoust. Soc. Am. **106**, 2127 (1999).
- K. H. Kim and W. S. Hodgkiss, "An intercomparison of robust matched-field processor performance in shallow-water source localization," MPL Tech. Mem. 455, Marine Physical Laboratory, Scripps Institution of Oceanography, San Diego, CA (1997).
- K. H. Kim and W. S. Hodgkiss, "An intercomparison of Bartlett, MVDR, and MV-EPC matched field processing results for the SWellEx G-to-I track," MPL Tech. Mem. 450, Marine Physical Laboratory, Scripps Institution of Oceanography, San Diego, CA (1996).
- K. H. Kim and W. S. Hodgkiss, "SWSS array position verification using adaptive beamforming and known source locations," MPL Tech. Mem. 449, Marine Physical Laboratory, Scripps Institution of Oceanography, San Diego, CA (1995).
- W. S. Hodgkiss, J. J. Murray, G. L. D'Spain, K. H. Kim, N. O. Booth, P. W. Schey, and J. Rice, "HLA/VLA broadband adaptive beamforming detection performance comparison in shallow water," J. Acoust. Soc. Am. **98**, 2932 (1995).
- W. S. Hodgkiss, J. J. Murray, K. H. Kim, and G. L. D'Spain, "Broadband matched-field source localization with a horizontal line array in shallow water," J. Acoust. Soc. Am. **97**, 3291 (1995).

AWARDS & ASSOCIATIONS

- AASERT Department of Defense Fellowship
- UIUC Intensive Workshop in Sound Computation Full Scholarship
- Acoustical Society of America
- Institute of Electrical and Electronics Engineers

PROFESSIONAL & VOLUNTEER ACTIVITIES

- Website Committee, Acoustical Society of America (June 2006–Present)
- Passive Acoustic Monitoring Standards, Acoustical Society of America (April 2006–Present)
- Public Relations Committee, Acoustical Society of America (June 2005–Present)
- Earth and Space Science Judge, Greater San Diego Science and Engineering Fair (2000, 2001, 2003, 2006–2008)
- Journal Manuscript Reviewer, Acoustical Society of America (March 2003, January 2005)

- Science Writing Awards Judge, Acoustical Society of America (May 2003)
- Science and Rules Judge, National Ocean Science Bowl (1998, 2000, 2001, 2003)
- Technical Editor, *Ocean Acoustic Interference Phenomena and Signal Processing*, AIP Press (June 2002)
- Organizing Board Member, SIO Committee for Humanity and Public Service (March 1997–March 2002)
- Mentor, Poseidon Academy of Marine Science & Technology, Mar Vista High School (January 2001–June 2001)
- Science Sister, Southwest Fisheries Science Sisters Program (March 1996–June 1997)
- Instructor, Stephen Birch Aquarium-Museum (June 1995–June 1997)
- Wilderness Guide, UCSD Outback Adventures (September 1992–September 1996)
- Co-founder and Co-advisor, UIUC Residence Hall Recycling Program (March 1990–August 1991)
- Co-founder and Co-coordinator, The Illini Muggers Club/Eco-Cup Campaign (August 1990–August 1991)