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Projects: *Simulation of a Subsurface Oil Spill by a Hydrocarbon Seep (SSOS-HYS)*
Oil Slicks in the Ocean: Predicting their Release Points Using the Natural Laboratory of the Santa Barbara Channel

Education: B.S. Physics/ Astronomy, SUNY at Stony Brook, New York 1984
M.S. Aeronomy, University of Michigan 1989
Ph.D. Atmospheric Sciences, Georgia Institute of Technology 1995

Positions: 2003-Present Researcher III, Marine Science Institute and Chemical Engineering Department, University of California, Santa Barbara, CA.
2001-2003 Researcher I, Marine Science Institute and Chemical Engineering Department, University of California, Santa Barbara, CA.
1999-2001 Post Doctoral Researcher, Chemical Engineering Department, University of California, Santa Barbara, CA.
1998-1999 Visiting Scientist, TNO Physics and Electronics Laboratory, The Hague, The Netherlands.
1996-1999 Post Doctoral Researcher, Martin Ryan Institute of Marine Science, National University of Ireland, Galway, Ireland.

Selected Publications:

- Leifer I. and J. Boles. 2005. Measurement of marine hydrocarbon seep flow through fractured rock and unconsolidated sediment. *Marine Petroleum Geology* (in press).
- Leifer, I. and J. Boles. 2005. Turbine seep-tent measurements of marine hydrocarbon seep forcing on sub-hourly time scales. *Journal of Geophysical Research* (in press).
- Leifer I., T. Del Sontro, B. Luyendyk and K. Broderick. 2005. Time evolution of beach tar, oil slicks, and seeps in the Coal Oil Point seep field, Santa Barbara Channel, California. Proc. Internat. Oil Spill Conf., May 15-19, 2005, Miami, FL, EIS Digital Publishing, 14718A.
- Leifer I., I and K. Wilson, J. Tarpley, R. Lewis, R. Imai, K. Mayer and C. Moore. 2004. Factors affecting marine hydrocarbon emissions in an area of natural seeps and abandoned oil wells - Summerland, California. Proc. Internat. Oil Spill Conf., May 15-19, 2005, Miami, FL, EIS Digital Publishing, 14718A.
- Leifer, I., J. Boles, J.F. Clark and B.P. Luyendyk. 2004. The dynamic nature of marine hydrocarbon seepage. *Environmental Geology* **46**(8):1038-1052.
- La Montagne, G., I. Leifer, S. Bergmann, L.C. Van De Werfhorst and P.A. Holden. 2004. Bacterial diversity in marine hydrocarbon-seep sediments. *Environmental Microbiology* **6**(8):799-808.
- Clark, J.F., I. Leifer, L. Washburn and B.P. Luyendyk. 2003. Compositional changes in natural gas bubble plumes: observations from the Coal Oil Point marine hydrocarbon seep field. *Geo Marine Letters* **23**:187-193.
- Roy, L.A., S. Steinert, S.M. Bay, D. Greenstein, Y. Sapozhnikova, O. Bawardi, I. Leifer and D. Schlenk. 2003. Biochemical effects of petroleum exposure in hornyhead turbot (*Pleuronichthys verticalis*) exposed to a gradient of sediments collected from a natural petroleum seep in CA, USA. *Aquatic Toxicology* **65**(2):159-169.
- Leifer, I., J.F. Clark, B. Luyendyk and D. Valentine. 2003. Identifying future directions for subsurface hydrocarbon migration research, EOS (American Geophysical Union Transactions) **84**(37):364-371.

- Leifer, I., and I. MacDonald. 2003. Dynamics of the gas flux from shallow gas hydrate deposits: Interaction between oily hydrate bubbles and the oceanic environment. *Earth and Planetary Science Letters* **210**(3/4):411-424.
- Leifer, I. and J. Clark. 2002. Modeling trace gases in hydrocarbon seep bubbles. Application to marine hydrocarbon seeps in the Santa Barbara Channel. *Russian Geology and Geophysics* **43**(7):613-621.
- Leifer, I. and A. Judd. 2002. Oceanic methane layers: A bubble deposition mechanism from marine hydrocarbon seepage. *Terra Nova* **16**:471-485.
- Leifer, I. and R. Patro. 2002. The bubble mechanism for transport of methane from the shallow sea bed to the surface: A review and sensitivity study. *Continental Shelf Research* **22**:2409-2428.
- MacDonald, I.R., I. Leifer, R. Sassen, P. Stine, R. Mitchell, and N. Guinasso Jr. 2002. Transfer of hydrocarbons from natural seeps to the water column and atmosphere. *Geofluids* **2**:95-107.
- De Leeuw, G., G.J. Kunz, G. Caulliez, D.K. Woolf, P. Bowyer, I. Leifer, P. Nightingale, M. Liddicoat, T.S. Rhee, M.O. Andreae, S.E. Larsen, F.A. Hansen, and S. Lund. 2001. LUMINY: An Overview. In *Gas Transfer and Water Surfaces*, Eds. M. Donelan, W. Drennan, E.S. Salzman, and R. Wanninkhof, AGU Monograph **127**:291-294.
- De Leeuw, G. and I. Leifer, 2001. Bubbles outside the bubble plume during the LUMINY wind-wave experiment in *Gas Transfer and Water Surfaces*, Eds. M. Donelan, W. Drennan, E.S. Salzman, and R. Wanninkhof, AGU Monograph **127**:295-301.
- Leifer, I. and G. De Leeuw. 2001. Bubble Measurements in Breaking-Wave Generated Bubble Plumes During the LUMINY Wind-Wave Experiment. In *Gas Transfer and Water Surfaces*, Eds. M. Donelan, W. Drennan, E.S. Salzman, and R. Wanninkhof, AGU Monograph **127**:303-309.
- Patro, R., I. Leifer, and P. Bowyer. 2001. Better bubble process modeling : Improved bubble hydrodynamics parameterisation. In *Gas Transfer and Water Surfaces*, Eds. M. Donelan, W. Drennan, E.S. Salzman, and R. Wanninkhof, AGU Monograph **127**:315-320.
- Boles, J.R., J.F. Clark, I. Leifer, and L. Washburn. 2000. Temporal variation in natural methane seep rate due to tides, Coal Oil Point area, California. *Journal of Geophysical Research* **106**(C11):27077-27086.
- Leifer, I., J. Clark, and R. Chen. 2000. Modifications of the local environment by a natural marine hydrocarbon seep, *Geophysical Research Letters* **27**(22):3711-3714.
- Leifer, I., G. De Leeuw, and L.H. Cohen. 2000. Secondary bubble production from breaking waves: The bubble burst mechanism, *Geophysical Research Letters* **27**(24):4077-4080.
- Leifer, I., R. Patro, and P. Bowyer. 2000. A study on the temperature variation of rise velocity for large clean bubbles. *Journal of Atmospheric and Oceanic Technology* **17**(10):1392-1402.
- Asher, W.E., L.M. Karle, B.J. Higgins, P.J. Farley, I.S. Leifer, and E.C. Monahan. 1995. The effect of bubble plume size on the parameterization of air-seawater gas transfer velocities", In *Proceedings of the Third International Symposium on Air-Water Gas Transfer Meeting*, Eds. B. Jähne and E.C. Monahan, Aeon Verlag, Hanau, Germany, 205-216.
- Asher, W.E., L.M. Karle, B.J. Higgins, P.J. Farley, E.C. Monahan, and I.S. Leifer. 1995. The influence of bubble plumes on air-seawater gas transfer velocities, *Journal of Geophysical Research* **101**:12, 027-12,041.