



Calhoun: The NPS Institutional Archive
DSpace Repository

NPS Scholarship

Publications

2016

**Electro-Optic Detection in Littoral for
MIW/ASW Using Navy's EODES Model and
Optic Data**

Chu, Peter C.

<https://hdl.handle.net/10945/58474>

This publication is a work of the U.S. Government as defined in Title 17, United States Code, Section 101. Copyright protection is not available for this work in the United States.

Downloaded from NPS Archive: Calhoun



Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

Dudley Knox Library / Naval Postgraduate School
411 Dyer Road / 1 University Circle
Monterey, California USA 93943

<http://www.nps.edu/library>



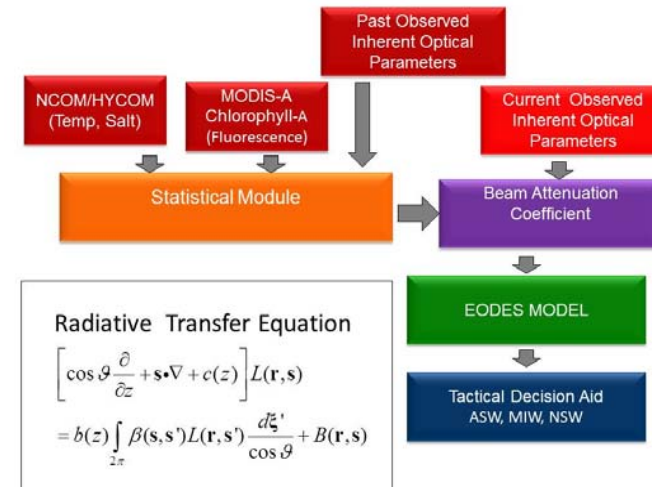
Electro-Optic Detection in Littoral for MIW/ASW Using Navy's EODES Model and Optic Data FY16-FY18



Peter C. Chu
Naval Postgraduate School

Objectives

- Enhancement of optical detection systems to get around the obvious limitations of current acoustic detection systems especially increased fleet and port security in noisy littoral waters.



EODES with assimilating ocean modeled and observed data.

Technical Approach

- Analyze the temperature, salinity, chlorophyll, and optical data collected by the NAVO
- Assess the underwater optical transmission loss
- Identify the salinity and chlorophyll effect on the underwater optical propagation
- Implement the Navy's EODES model for the East Asian Marginal Seas such as the Yellow Sea, East China Sea, South China Sea, and Philippines Sea.
- Identify environmental effect on detection quality in the East Asian Marginal Seas

Accomplishments –

5 NPS Theses Completed

Chu, P.C., B. F. Breshears, A. J. Cullen, R. F. Hammerer, R. P. Martinez, T. Q. Phung, T. Margolina, C. W. Fan, 2017: Environmental effects on underwater optical transmission. SPIE Proceedings 10186, Ocean Sensing and Monitoring IX, 1018609 (22 May 2017); doi: [10.1117/12.2256466](https://doi.org/10.1117/12.2256466)

Chu, P.C., 2017: Effect of super typhoon Guchol 2012 on underwater optical detection in the Philippine Sea. Applied Optics (submitted).

September 2016