DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

Applications of Synthetic Aperture Radar to Meteorology and Oceanography Command Operations

Todd D. Sikora
Millersville University
P.O. Box 1002
Millersville, PA 17551-0302
phone: (717) 872-3292 fax: (717) 871-4725 email: Todd.Sikora@millersville.edu

Grant Number: N00014-10-1-0569

LONG-TERM GOALS

This research is an expansion of the ONR grants, "Applications of Synthetic Aperture Radar to Meteorology and Oceanography Command Operations," N00014-06-1-0046 (Dr. Todd D. Sikora), N00014-07-1-0934 (Dr. George S. Young), and N0014-07-1-0577 (Dr. Nathaniel S. Winstead). The expansion allows for the completion of publications that have resulted from that research.

OBJECTIVES

The objectives for the research are described in the annual reports for ONR grants N00014-06-1-0046, N00014-07-1-0934, and N00014-07-1-0577.

APPROACH

The approaches for the research are described in the annual reports for ONR grants N00014-06-1-0046, N00014-07-1-0934, and N00014-07-1-0577.

WORK COMPLETED

Within the last fiscal year, we have published one refereed journal article (*Sikora et al.* 2011), we have had one refereed journal article in press (*Jones et al.* in press), and we have submitted two manuscripts for refereed publication (*Swales et al.* submitted and *Young et al.* submitted). Moreover, we have published one non-refereed conference paper (*Young et al.* 2010).

RESULTS

The results for the research are described in the annual reports for ONR grants N00014-06-1-0046, N00014-07-1-0934, and N00014-07-1-0577.

IMPACT/APPLICATIONS

The impact/applications of the research are described in the annual reports for ONR grants N00014-06-1-0046, N00014-07-1-0934, and N00014-07-1-0577.

RELATED PROJECTS

Projects related to the research are described in the annual reports for ONR grants N00014-06-1-0046, N00014-07-1-0934, and N00014-07-1-0577.

REFERENCES

Jones, C.T., T.D. Sikora, P.W. Vachon, and J. Wolfe: Towards automated identification of sea-surface temperature front signatures in RADARSAT-2 images. *J. Atmos. Oceanic Technol.*, in press.

Sikora, T.D., G.S. Young, M.D. Stepp, and C.M. Fisher, 2011: A synthetic aperture radar-based climatology of open cell convection over the Northeast Pacific Ocean. *J. Appl. Meteor. Climatol.*, **50**, 594-603.

Swales, D.J., G.S. Young, T.D. Sikora, N.S. Winstead, and H.N. Shirer: Synthetic aperture radar remote sensing of shear-driven atmospheric internal gravity waves in the vicinity of warm fronts. Submitted to *Mon. Wea. Rev.*

Young, G.S., N.S. Winstead, and T.D. Sikora, 2010: A SAR-based error warning product. *Preprints, Seventeenth Conference on Satellite Meteorology and Oceanography*, AMS, Annapolis, MD, 27-30 September 2010.

Young, G.S., N.S. Winstead, and T.D. Sikora: The use of synthetic aperture radar-derived wind speed in numerical weather prediction verification. Submitted to *Mon. Wea. Rev.*

PUBLICATIONS

New or status changed:

Jones, C.T., T.D. Sikora, P.W. Vachon, and J. Wolfe: Towards automated identification of sea-surface temperature front signatures in RADARSAT-2 images. *J. Atmos. Oceanic Technol.* [in press, refereed]

Sikora, T.D., G.S. Young, M.D. Stepp, and C.M. Fisher, 2011: A synthetic aperture radar-based climatology of open cell convection over the Northeast Pacific Ocean. *J. Appl. Meteor. Climatol.*, **50**, 594-603. [published, refereed]

Swales, D.J., G.S. Young, T.D. Sikora, N.S. Winstead, and H.N. Shirer: Synthetic aperture radar remote sensing of shear-driven atmospheric internal gravity waves in the vicinity of warm fronts. *Mon. Wea. Rev.* [refereed]

Young, G.S., N.S. Winstead, and T.D. Sikora, 2010: A SAR-based error warning product. *Preprints, Seventeenth Conference on Satellite Meteorology and Oceanography*, AMS, Annapolis, MD, 27-30 September 2010. [published]

Young, G.S., N.S. Winstead, and T.D. Sikora: The use of synthetic aperture radar-derived wind speed in numerical weather prediction verification. *Mon. Wea. Rev.* [refereed]