**REPORT DOCUMENTATION PAGE**

1. **AGENCY USE ONLY (Leave blank)**
2. **REPORT DATE**
   10/30/95
3. **REPORT TYPE AND DATES COVERED**
   Final 9/1/92 - 8/31/95
4. **TITLE AND SUBTITLE**
   Analysis, Synthesis and Processing of Fractal Signals Using Wavelets
5. **AUTHOR(S)**
   Prof. Alan V. Oppenheim
6. **PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)**
   Research Laboratory of Electronics
   Massachusetts Institute of Technology
   77 Massachusetts Avenue
   Cambridge, MA 02139
7. **SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)**
   Air Force Office of Scientific Research
   Building 410
   Bolling Air Force Base, DC 20332-6448
8. **PERFORMING ORGANIZATION REPORT NUMBER**
   AFOSR-TR-95
9. **SUPPLEMENTARY NOTES**
   The view, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation.
10. **DISTRIBUTION/AVAILABILITY STATEMENT**
    Approved for public release; distribution unlimited.

**ABSTRACT (Maximum 200 words)**

This is the final report summarizing the efforts performed under the grant “Analysis, Synthesis and Processing of Fractal Signals using Wavelets”. This report includes a cumulative list of theses, conference presentations, and journal articles that have been supported either all or in part by the grant. Copies of the full texts have been sent to the program manager as they were written.

Detailed work has been reported in the parent grant entitled “Signal Analysis, Synthesis and Processing Using Fractals and Wavelets”, Grant Number AFOSR-91-0034-C.

**SUBJECT TERMS**

17. **SECURITY CLASSIFICATION OF REPORT**
    UNCLASSIFIED
18. **SECURITY CLASSIFICATION OF THIS PAGE**
    UNCLASSIFIED
19. **SECURITY CLASSIFICATION OF ABSTRACT**
    UNCLASSIFIED
20. **LIMITATION OF ABSTRACT**
    UL

**NUMBER OF PAGES**

15. **PRICE CODE**

16. **DTIC QUALITY INDICATOR**
    Std 298 (Rev. 2-89)
    Standard Form 298 (Rev. 2-89)
    Prescribed by the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503
Final Report
Analysis, Synthesis and Processing of
Fractal Signals Using Wavelets

September 1, 1992 – August 31, 1995

Research Organization: Digital Signal Processing Group
Research Laboratory of Electronics
Massachusetts Institute of Technology

Principal Investigator: Alan V. Oppenheim
Distinguished Professor of Electrical Engineering

Grant Number: F49620-92-J-0255
OSP Number: 62094

Program Manager: Dr. Jon A. Sjogren
This is the final report summarizing the efforts performed under the grant “Analysis, Synthesis and Processing of Fractal Signals using Wavelets”. This report includes a cummulative list of theses, conference presentations, and journal articles that have been supported either all or in part by the grant. Copies of the full texts have been sent to the program manager as they were written.

Detailed work has been reported in the parent grant entitled “Signal Analysis, Synthesis and Processing Using Fractals and Wavelets”, Grant Number AFOSR-91-0034-C.

During the period October 1, 1993 through September 30, 1994 the grant supported the doctoral research of Michael Richard. This research was completed during this period and a doctoral thesis entitled “Estimation and Detection With Chaotic Systems” was submitted to and accepted by the Department of Electrical Engineering and Computer Science at MIT. Copies of the full text of the thesis and resulting Technical Report have been sent to the program manager.

In addition to the support of the research mentioned above, the grant funding has provided support for the doctoral research of Andrew Singer on “Signal Processing and Communication with Solitons”. Andrew Singer's doctoral thesis is expected to be completed and submitted to the Department of Electrical Engineering and Computer Science at MIT in December 1995.

The grant funding has also provided support for one semester for the graduate research of Andrew Halberstadt. It is anticipated that Mr. Halberstadt will complete his graduate program in December 1998.

Publications in Reviewed Journals


Conference Proceedings


Symposium on Optics, Imaging, and Instrumentation, July 9-14, 1995, (San Diego) CA.


Talks


Thesis


Technical Report


To Appear
