

Development of a metamaterial coating for broadband monostatic and bistatic rcs reduction.

Umrath Stefan, Andrey Osipov, *Senior Member, IEEE*, and Erich Kemptner

Abstract—Significant reduction of mono- and bistatic scattering cross sections of an electrically large metallic cube through the application of an electrically thin metamaterial low reflection coating operating in the Ka-band (30–40 GHz) is described. A coating composed of a metallic array of sub-wavelength sized capacitively loaded strip inclusions printed on top of a thin, slightly lossy and grounded substrate has been designed and fabricated to experimentally evaluate the performance of the coating in scattering reduction. The scattering reduction is estimated by comparing the mono- and bistatic scattering patterns of the coated and uncoated cube. The measurement results are compared with full wave and physical theory of diffraction simulations, and the possibility of accurately modeling the low reflection coatings with impedance boundary conditions is pointed out.

Index Terms—IEEEtran, journal, L^AT_EX, paper, template.

I. INTRODUCTION

THIS demo file is intended to serve as a “starter file” for IEEE journal papers produced under L^AT_EX using IEEEtran.cls version 1.8 and later. I wish you the best of success.

mds

December 27, 2012



Michael Shell Biography text here.

John Doe Biography text here.

A. Subsection Heading Here

Subsection text here.

1) Subsubsection Heading Here: Subsubsection text here.

II. CONCLUSION

The conclusion goes here.

APPENDIX A

PROOF OF THE FIRST ZONKLAR EQUATION

Appendix one text goes here.

APPENDIX B

Appendix two text goes here.

Jane Doe Biography text here.

ACKNOWLEDGMENT

The authors would like to thank...

REFERENCES

- [1] H. Kopka and P. W. Daly, *A Guide to L^AT_EX*, 3rd ed. Harlow, England: Addison-Wesley, 1999.

M. Shell is with the Department of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, 30332 USA e-mail: (see <http://www.michaelshell.org/contact.html>).

J. Doe and J. Doe are with Anonymous University.

Manuscript received April 19, 2005; revised December 27, 2012.