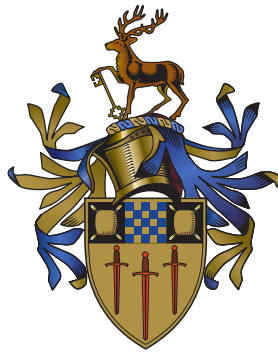


MEASUREMENT UNCERTAINTY IN NON-LINEAR  
BEHAVIOURAL MODELS OF MICROWAVE  
POWER AMPLIFIERS

Laurence Stant



A thesis submitted in partial fulfillment for the degree  
of Doctor of Philosophy

in the  
Advanced Technology Institute and Department of  
Electronic Engineering  
Faculty of Engineering and Physical Sciences  
University of Surrey

September 2017

# Declaration of Authorship

I confirm that the submitted work is my own work and that I have clearly identified and fully acknowledged all material that is entitled to be attributed to others (whether published or unpublished) using the referencing system set out in the programme handbook. I agree that the University may submit my work to means of checking this, such as the plagiarism detection service Turnitin UK. I confirm that I understand that assessed work that has been shown to have been plagiarised will be penalised.

The authors confirm that data underlying the findings are available without restriction. Details of the data and how to request access are available from the University of Surrey publications repository at <http://epubs.surrey.ac.uk/blahTBD>

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Laurence Stant (Author)

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Date

*“What error drives our eyes and ears amiss? Until I know this sure uncertainty  
I’ll entertain the offered fallacy.”*

William Shakespeare, The Comedy of Errors

*“That’s right!” shouted Vroomfondel, “we demand rigidly defined areas of doubt  
and uncertainty!”*

Douglas Adams, The Hitchhikers Guide to the Galaxy

# Abstract

Abstract goes here

# Research Outcomes

## Publications

- [1] L. Stant, P. Aaen, and N. Ridler, “Evaluating residual errors in waveguide network analysers from microwave to submillimetre-wave frequencies,” in *IET Colloquium on Millimetre-Wave and Terahertz Engineering [amp ] Technology 2016*, Institution of Engineering and Technology (IET), 2016. DOI: 10.1049/ic.2016.0016.
- [2] —, “Comparing methods for evaluating measurement uncertainty given in the JCGM ‘evaluation of measurement data’ documents,” *Measurement*, vol. 94, pp. 847–851, Dec. 2016. DOI: 10.1016/j.measurement.2016.08.015.
- [3] —, “Evaluating residual errors in waveguide VNAs from microwave to submillimetre-wave frequencies,” *IET Microwaves, Antennas & Propagation*, vol. 11, no. 3, pp. 324–329, Feb. 2017. DOI: 10.1049/iet-map.2016.0455.

# Acknowledgements

I want to thank...

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# 1 Introduction

Testing, testing[1], [2].

# Bibliography

- [1] L. Stant, P. Aaen, and N. Ridler, “Evaluating residual errors in waveguide network analysers from microwave to submillimetre-wave frequencies,” in *IET Colloquium on Millimetre-Wave and Terahertz Engineering [amp ] Technology 2016*, Institution of Engineering and Technology (IET), 2016. DOI: 10.1049/ic.2016.0016.
- [2] —, “Comparing methods for evaluating measurement uncertainty given in the JCGM ‘evaluation of measurement data’ documents,” *Measurement*, vol. 94, pp. 847–851, Dec. 2016. DOI: 10.1016/j.measurement.2016.08.015.

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Testing, testing2[1].

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- [1] L. Stant, P. Aaen, and N. Ridler, “Evaluating residual errors in waveguide VNAs from microwave to submillimetre-wave frequencies,” *IET Microwaves, Antennas & Propagation*, vol. 11, no. 3, pp. 324–329, Feb. 2017. DOI: 10.1049/iet-map.2016.0455.

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