UNIVERSITÄT PADERBORN
Die Universität der Informationsgesellschaft

Department of Computer Science
Faculty for Electrical Engineering, Computer Science and Mathematics
Computer Engineering Group

Masterthesis

submitted by

Hendrik Hangmann
Giefersstrasse 7
33102 Paderborn
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EVOLUTION OF HEAT FLOW PREDICTION MODELS FOR FPGA DEVICES

Gutachter_____
Dr. Paul Kaufmann

Gutachter_____
Jun-Prof. Dr. Christian Plessl

CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

1

INTRODUCTION

On today's integrated curcuits there is a considerable potential of generating high temperatures, due to shrinking devices and increasing frequencies. Especially FPGAs can generate local hotspots and alarmingly high temperature increases with only a rather small resource utilization [1]. For many cases the accurate temperature estimation and prediction is becoming increasingly important.

2

CONCLUSION

In this thesis I have presented crazy shit!

A

APPENDIX

The implementation of the temperature measurement system and all other files can be found on the appended CD. The folder structure is as follows.

BIBLIOGRAPHY

[1] Andreas Agne, Hendrik Hangmann, Markus Happe, Marco Platzner, and Christian Plessl. Seven recipes for setting your FPGA on fire – A cookbook on heat generators. *Microprocessors and Microsystems*, 2013. (Cited on page 1.)

[2] Markus Happe, Andreas Agne, and Christian Plessl. Measuring and predicting temperature distributions on FPGAs at run-time. *Reconfigurable Computing and ...*, pages 55–60, 2011.

[3] Wei Huang and Shougata Ghosh. HotSpot: A compact thermal modeling methodology for early-stage VLSI design. *Very Large Scale ...*, 14(5):501–513, 2006.

[4] S.S. Sapatnekar and Yong Zhan. Fast Computation of the Temperature Distribution in VLSI Chips Using the Discrete Cosine Transform and Table Look-Up. *Proc. of Design Automation Conference (ASP-DAC)*, 1:87–92, 2005.

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Hiermit versichere ich, die vorliegende Diplomarbeit ohne Hilfe Dritter und nur mit den angegebenen Quellen und Hilfsmitteln angefertigt zu haben. Alle Stellen, die aus den Quellen entnommen wurden, sind als solche kenntlich gemacht worden. Diese Arbeit hat in gleicher oder ähnlicher Form noch keiner Prüfungsbehörde vorgelegen.

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Hendrik Hangmann