Acknowledgements

To start, I want to sincerely thank my supervisor Dr. Winfried Kernbichler for giving me the opportunity of writing this thesis in his work group and for supporting me with his constructive feedback.

I am also very grateful to my co-supervisor and dear friend Michael Eder for our fruitful collaboration and his valuable ideas, but also for the amazing time that we had at the office together with Philipp Ulbl, whom I also want to thank.

Furthermore, I want to express my gratitude to Dr. Sergei Kasilov and Markus Meisterhofer for their important contributions to this work and also to all members of our work group for their patience and helpful feedback in the regular team meetings.

Many thanks also to all my friends who have made these years of my studies extremely delightful and with who I have had countless interesting discussions.

I now want to deeply thank my entire family for supporting me whenever possible and particularly my parents for their generous financial support during my studies.

Finally, I thank my love Sarah for being there for me with all her love and patience.

This work has been carried out within the framework of the EUROfusion Consortium and has received funding from the Euratom research and training programme 2014-2018 under Grant Agreement No. 633053. The views and opinions expressed herein do not necessarily reflect those of the European Commission.