

## **Acknowledgments**

I would like to express my deep gratitude to my advisor, Diego Pallara, for all the mathematics and the scientific enthusiasm he has transmitted to me during these years.

I also thank him for his friendship and his incomparable helpfulness.

I warmly thank Fabio Paronetto and Michele Miranda for many stimulating discussions and for having shared with me part of the research work contained in this thesis.

It is also a pleasure to thank Giorgio Metafuno who, during these years, has held interesting courses which have been useful for my research studies.

Many thanks go also to all my colleagues for the real fun we have had together during these years.

I have no words to thank Massimiliano and my family who have always been present and have supported me with love especially in the hard times.