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## Magnetic imaging of spin waves and magnetic phase transitions with nitrogen-vacancy centers in diamond

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# ACKNOWLEDGEMENTS

As I reflect about the last four years, I can't help but feeling grateful for the opportunities I had and, even more, for the people I met on my path, that contributed to this 4-year trip both from the scientific and the personal point of view.

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My PhD started as the only member of an empty lab at the end of a dark corridor in the basement, and was hit halfway by a pandemic. Despite this, I met a great number of talented, fun, like-minded people that really like science, but like having fun and socializing just as much - and often more. I truly enjoyed every single time we went to the TeePee café, every dinner, every party, every conference and spring/winter school. It is thanks to you (and that amazing espresso machine) that I enjoyed my PhD as much as I did. The gratitude I feel toward my colleagues - many of whom are now really more friends than anything - can't fit in two pages. I just want to mention here a few people that contributed to my PhD by providing a social environment in which I could work long hours and not be weighed down. In sparse order, I want to thank Nikos, Holger, Yildiz, Joris, Brecht, Michael, Samer, Yufan, Allard, Edouard, Luigi, Thierry, Jorrit, Rasa, Mattias, Lukas, Laëti, Dima, Adriàn, Sona, Nina, Ranko, Pascal, Dejan, Joeri, Marc, Dirk, Andreas. The people at QN will receive my full non-scientific acknowledgements separately.

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# CURRICULUM VITÆ

## Iacopo BERTELLI

11-06-1992      Born in Modena, Italy.

### EDUCATION

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- 2011-2014      B.Sc. in Physics  
Università di Modena e Reggio Emilia, Modena, Italy
- 2014-2017      M.Sc. in Physics (*cum Laude*)  
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*Thesis:*          Magnetic analysis of the subsurface region of ball bearing inner rings subject to rolling contact fatigue  
*Supervisor:*    Prof. dr. S. D'Addato  
*Supervisor:*    Prof. dr. A. Kirilyuk (Radboud University)
- 2015-2016      Erasmus Exchange Program  
Radboud University, Nijmegen
- 2017-2021      Ph.D. in Physics  
University of Leiden  
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*Promotor:*      Prof. dr. J. Aarts  
*Co-Promotor:*    Dr. T. van der Sar



# LIST OF PUBLICATIONS

\* indicates equal contribution

7. B. G. Simon, S. Kurdi, H. La, **I. Bertelli**, J. J. Carmiggelt, M. T. Ruf, N. de Jong, H. van den Berg, A. Katan, T. van der Sar, *Directional Excitation of a High-Density Magnon Gas Using Coherently Driven Spin Waves*, *Nano Letters* **21**, 8213 (2021).
6. **I. Bertelli**, B. G. Simon, T. Yu, J. Aarts, G. E. W. Bauer, Y. M. Blanter, T. van der Sar, *Imaging spin-wave damping underneath metals using electron spins in diamond*, *Advanced Quantum Technologies* 2100094 (2021).
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3. A. Rustagi, **I. Bertelli**, T. van der Sar, P. Upadhyaya, *Sensing chiral magnetic noise via quantum impurity relaxometry*, *Physical Review B* **102**, 220403 (2020).
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1. Y. Kadin, **I. Bertelli**, A. Kirilyuk, *Magneto-optical Analysis of the Subsurface Region in a Bearing Ring Subjected to Rolling Contact Fatigue*, *Tribology Transactions* **61**, 4 (2018).