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## **Imperfections: using defects to program designer matter**

Meeussen, A.S.

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# Publications

## Publications treated in this dissertation

A.S. Meeussen and M. van Hecke. “Reversible shape-morphing sheets via snap-through instabilities”. Manuscript in preparation (2021).

A.S. Meeussen, E.C.O. Oğuz, M. van Hecke, and Y. Shokef. “Response evolution of mechanical metamaterials under architectural transformations”. In: *New Journal of Physics* 22 (2020), p. 023030.

A.S. Meeussen, E.C.O. Oğuz, Y. Shokef, and M. van Hecke. “Topological defects produce exotic mechanics in complex metamaterials”. In: *Nature Physics* 2 (2020), pp. 1745-2481.

## Other

A.S. Meeussen, J. Paulose, and V. Vitelli. “Geared topological metamaterials with tunable mechanical stability”. In: *Phys Rev. X* 6 (2016), p. 041029.

J. Paulose, A.S. Meeussen, and V. Vitelli. “Selective buckling via states of self-stress in topological metamaterials”. In: *Proc. Natl. Acad. Sci. USA* 112 (2015), pp. 7639-7644.

F. van Beijnum, A.S. Meeussen, C. Rétif, and M.P. van Exter. “Rayleigh scattering of surface plasmons by sub-wavelength holes”. In: *Opt. Express* 22 (2014), pp. 10317-10331 .



# Curriculum Vitae

## About

**name** Anne Sophia Meeussen  
**born** 12 August 1990, Rotterdam, The Netherlands  
**contact** a.meeussen@gmail.com  
+31613994495  
**orcid** orcid.org/0000-0003-1243-0318

## Career

**2021-** Postdoctoral researcher of Materials Design, Harvard University (Cambridge, USA)  
Supervision: Prof. dr. Katia Bertoldi.  
**2016-2021** PhD Experimental Physics, Leiden University and AMOLF (Leiden and Amsterdam, Netherlands)  
Thesis: design of reshapeable and topological mechanical metamaterials.  
Supervision: Prof. dr. Martin van Hecke.

## Education

**2013-2016** MSc Research in Theoretical Physics, Leiden University (cum laude)  
Thesis: developing topological design principles for mechanical metamaterials.  
Supervision: Prof. dr. Vincenzo Vitelli and Dr. Jayson Paulose.  
**2009-2013** BSc Physics, Leiden University (cum laude)  
Thesis: investigating the behavior of surface plasmon polaritons in randomly porous dielectric media.  
Supervision: Prof. dr. Martin van Exter and MSc Frerik van Beijnum.  
**2002-2008** Gymnasium, Krimpenerwaard College Krimpen aan den IJssel  
Focus: natural sciences, engineering and health.



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