

## Curriculum Vitae

Sine Leergaard Wiggers  
Associate Professor  
Sine Leergaard Wiggers  
Department of Mechanical and Electrical Engineering  
SDU Mechanical Engineering  
Postal address:  
Campusvej 55  
5230 Odense M  
Denmark  
Email: slp@sdu.dk  
Mobile: 26700439  
Phone: 65507508



## Curriculum

I have a master degree in mechanical engineering, from the Technical University of Denmark in 2001, with solid mechanics as specialty. My experiences are in Computer Programming, Multibody Dynamics (Mechanisms), Dynamic Analysis, Finite Element Analysis and Structural Vibrations.

Ph.D. degree from the Technical University of Denmark in 2005 and the Ph.D. work concerns Computer Simulation and Analysis of chain vibrations, with focus on chain drives in marine diesel engines. In the Ph.D. project the main emphasis was on the usage of the methods of Multibody Dynamics in 2D and of the methods of Contact Models.

I continued working half a year with further development and implementation of my research work at the company MAN B&W Diesel A/S, after my Ph.D. thesis was finalized.

From 2005-2008 I worked as a consultant in the field of structural vibrations and strength calculations of ships at the consultant company Lloyd's Register (Former Ødegaard & Danneskiold-Samsøe).

## Research areas

Multibody Dynamics

## Education

2018	Course in Nonlinear Computational solid structural mechanics
2018	Course in education management at Danish universities
2014	C1 certificate in "Teaching in English at SDU"
2008-2011	Professional teacher training
2001-2005	Ph. D., Solid mechanics, Technical University of Denmark
1995-2001	Master of science in mechanical engineering, Technical University of Denmark

## Employment

2021-	Head of Program for Mechanical Engineering, BSc & MSc
2017-2025	Head of Program for Msc. Structural Engineering, MSc.
2011-	Associate Professor, University of Southern Denmark
2008-2011	Assistant professor, University of Southern Denmark
2005-2008	Consultant, Lloyd's Register ODS
2004-2005	Consultant, Man B&W

## Teaching

Master courses - MSc in Engineering - Mechanical (Structural Engineering), SDU: Continuum mechanics, Stability and vibrations, Robot technology 2/Multibody dynamics, Fracture mechanics.

Bachelor courses - BEng and BSc in Mechanical Engineering, SDU: Vehicle Dynamics, Math & Strength of Materials 1 & 2, Structural Vibrations and FEM.

Courses in the admission course programme, SDU: Refreshment course in high school mathematics, 1 week course  
Supervision, SDU: Supervisor for master projects, bachelor projects, students in internship, bachelor semester projects 1., 2. and 4. semester and master semester projects 3. semester.

## Membership in committee, council, board, network

Academic Study Board, Admission and Legality (Organisational unit)  
Leergaard Wiggers, S. (Member)

5. Jan 2022 → 31. Dec 2025

**Danmarks Universitetspædagogiske netværk (DUN) (External organisation)**

Leergaard Wiggers, S. (Chairman)

2008 → ...

**Censorkorpset for ingeniøruddannelserne og de tekniske diplomuddannelser. (External organisation)**

Wiggers, S. L. (Member)

2014 → ...

**Videnskabelige Råd, DCAMM (External organisation)**

Wiggers, S. L. (Member)

2014 → ...

**University of Southern Denmark (External organisation)**

Wiggers, S. L. (Member)

2013 → ...

## Publications

**Structural Stability and Vibration: An Integrated Introduction by Analytical and Numerical Methods**

Wiggers, S. L. & Pedersen, P., 1. Mar 2018, 1. ed. Springer. 158 p. (Springer Tracts in Mechanical Engineering).

**Beam-column eigenfrequencies**

Wiggers, S. L. & Pedersen, P., 1. Jan 2018, *Springer Tracts in Mechanical Engineering*. Wiggers, S. L. & Pedersen, P. (eds.). Springer, p. 41-46 (Springer Tracts in Mechanical Engineering; No. 9783319727202).

**Buckling with spring supported BC**

Wiggers, S. L. & Pedersen, P., 1. Jan 2018, *Springer Tracts in Mechanical Engineering*. Wiggers, S. L. & Pedersen, P. (eds.). Springer, p. 47-57 (Springer Tracts in Mechanical Engineering; No. 9783319727202).

**Dynamic stability formulation**

Wiggers, S. L. & Pedersen, P., 1. Jan 2018, *Springer Tracts in Mechanical Engineering*. Wiggers, S. L. & Pedersen, P. (eds.). Springer, p. 73-84 (Springer Tracts in Mechanical Engineering; No. 9783319727202).

**Eigenfrequencies of beam-columns with spring supported BC**

Wiggers, S. L. & Pedersen, P., 1. Jan 2018, *Springer Tracts in Mechanical Engineering*. Wiggers, S. L. & Pedersen, P. (eds.). Springer, p. 59-72 (Springer Tracts in Mechanical Engineering; No. 9783319727202).

**Eigen solutions for the euler cases**

Wiggers, S. L. & Pedersen, P., 1. Jan 2018, *Springer Tracts in Mechanical Engineering*. Wiggers, S. L. & Pedersen, P. (eds.). Springer, p. 13-22 (Springer Tracts in Mechanical Engineering; No. 9783319727202).

**Shear beam loads and cantilever beam-columns**

Wiggers, S. L. & Pedersen, P., 1. Jan 2018, *Springer Tracts in Mechanical Engineering*. Wiggers, S. L. & Pedersen, P. (eds.). Springer, p. 33-39 (Springer Tracts in Mechanical Engineering; No. 9783319727202).

**Dynamic Analysis of The Intelligent Sprayer Boom**

Wiggers, S. L., Maagaard, J., Terp, C. I. & Björnsson, O. H., 2013. 12 p.

**Model of Contact between Rollers and Sprockets in Chain Drive Systems**

Pedersen, S. L., 2005, In: *Archive of Applied Mechanics*. 74, 7, p. 489-508 9 p.

A Roller Chain Drive Model Including Contact with Guide-bars

Pedersen, S. L., Hansen, J. M. & Ambrósio, J. A. C., 2004, In: *Multibody System Dynamics*. 12, 3, p. 285-301 16 p.

Contact Problems in Roller Chain Drive Systems

Wiggers, S. L., 2004, *ICTAM04 - 21st International Congress of Theoretical and Applied Mechanics*. Gutkowski, W. & Kowalewski, T. A. (eds.). Warsaw, Poland, August 15-21 : International Congress of Theoretical and Applied Mechanics, Vol. cd and book of abstracts. 2 p.

Model of Contact between Rollers and Sprockets in Chain Drive Systems

Pedersen, S. L., 2004, Danish Center for Applied Mathematics and Mechanics.

Simulation and Analysis of Chain Drive Systems

Pedersen, S. L., 2004, DTU: Danish Center for Applied Mathematics and Mechanics. 142 p.

A Roller Chain Drive Model Including Contact with Guide-bars

Pedersen, S. L., Hansen, J. M. & Ambrósio, J. A. C., 2003, *ECCOMAS - Multibody Dynamics 2003: International Conference on Advances In Computational Multibody Dynamics*. Ambrósio, J. A. C. (ed.). Lisbon, Portugal, July 1-4: European Community on Computational Methods in Applied Sciences, 16 p.

Comportamento Dinâmico de Transmissões por Corrente Estudo Numérico e Experimental

Pereira, C., Pedersen, S. L., Ramalho, A. & Ambrósio, J. A. C., 2003, *Proceedings of the VI Congresso Ibero-Americano de Engenharia Mecânica*. Dias, A. M. (ed.). Coimbra, Portugal, October 15-18, p. 1297-1302 5 p.

A Novel Roller Chain Drive Model Using Multibody Dynamics Analysis Tools

Pedersen, S. L., Hansen, J. M. & Ambrósio, J. A. C., 2002, *Virtual Nonlinear Multibody Dynamic Systems*. Schiehlen, W. & Valášek, M. (eds.). Prague, Czech Republic, June 23 - July 3: NATO Advances Study Institute, Vol. II. p. 180-186 6 p.

A Roller Chain Drive Model based on Multibody Dynamics

Pedersen, S. L., 2002, *DCAMM International Symposium on Challenges in Applied Mechanics*. Pedersen, P. & Olhoff, N. (eds.). Hotel Frederiksdal, Kgs. Lyngby, Denmark, July 25 - 27: Danish Center for Applied Mathematics and Mechanics, p. 257-262 5 p.

Roller-Sprocket Contact Models in Dynamics of Roller-Chain Drives

Ambrósio, J. A. C., Pedersen, S. L. & Hansen, J. M., 2002, *New Developments on Tribology: Theoretical Analysis and Application to Industrial Processes*. Grácio, J., Fan, Q. H. & Aveiro, N. A. (eds.). Aveiro, Portugal, May 8-9: Actas das 8as Jornadas Portuguesas de Tribologia, p. 195-202 7 p.

## Participation in Conferences and Courses

### DCAMM 19th Internal Symposium

Leergaard Wiggers, S. (Participant)

6. Mar 2024 → 8. Mar 2024

### DUN conference

Leergaard Wiggers, S. (Participant)

24. May 2023 → 25. May 2023

### 100th anniversary of Frithiof Niordson

Leergaard Wiggers, S. (Participant)

10. Nov 2022

### DCAMM 18th Internal Symposium

Leergaard Wiggers, S. (Participant)

9. Mar 2022 → 11. Mar 2022

**DCAMM 17th internal symposium**

Wiggers, S. (Participant)  
11. Mar 2019 → 13. Mar 2019

**NONLINEAR COMPUTATIONAL SOLID & STRUCTURAL MECHANICS**

Wiggers, S. L. (Participant)  
21. May 2018 → 25. May 2018

**DCAMM**

Wiggers, S. L. (Participant)  
13. Mar 2017 → 15. Mar 2017

**DCAMM seminar**

Wiggers, S. L. (Participant)  
25. Sept 2015

**ECCOMAS 2015**

Wiggers, S. L. (Participant)  
29. Jun 2015 → 2. Jul 2015

**MATLAB at Syddansk Universitet**

Wiggers, S. L. (Participant)  
28. May 2015

**DCAMM**

Wiggers, S. L. (Participant)  
16. Mar 2015 → 18. Mar 2015

**11th Biennial International Conference on Vibration Problems**

Wiggers, S. L. (Speaker)  
9. Sept 2013 → 12. Sept 2013

**DCAMM 14th Internal Symposium**

Wiggers, S. L. (Participant)  
13. Mar 2013 → 15. Mar 2013