

## CURRICULUM VITAE – MIGUEL BENEITEZ

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### PERSONAL INFORMATION

Miguel Beneitez  
1993-03-16  
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**Present Position:** PhD Student at KTH Royal Institute of Technology

### EDUCATION

**PhD in Engineering Mechanics, KTH Royal Institute of Technology**  
(2017-June 2021 [expected]). A dynamical system approach to transition.  
Thesis advisor: Dan Henningson (KTH), Philipp Schlatter (KTH) & Yohann Duguet (LIMSI-CNRS).

**M. S. in Engineering Mechanics, KTH Royal Institute of Technology**  
(2015-2017). 120 ECTS. GPA: 5/5.  
Thesis advisor: Shervin Bagheri (KTH) & Philipp Schlatter (KTH).  
Thesis title: "Turbulent flow control via nature inspired surface modifications".

**B. S. in Engineering in Industrial Technologies, the University Carlos III of Madrid (UC3M)** (2011-2015). 240 ECTS. GPA 8.14/10, top 5%.  
Thesis advisor: Alejandro Sevilla (UC3M).  
Thesis title: "Study of axially stretched compound capillary jets".

### PREVIOUS POSITIONS

**2015/02–2015/08** Fellow in the Thermal Engineering and Fluid Mechanics department, UC3M.

### PEER-REVIEWED JOURNAL ARTICLES

4. M. Beneitez, Y. Duguet & D. S. Henningson. (2020) Modeling the collapse of the edge when two transition routes compete. *Phys. Rev. E* **102**, 053108

3. M. Beneitez, Y. Duguet, P. Schlatter & D. S. Henningson (2020). Edge manifold as a Lagrangian Coherent Structure in a high-dimensional state space. *Phys. Rev. Research* **2**, 033258

2. C. Vavaliaris, M. Beneitez & D. S. Henningson (2020). Optimal perturbations and transition energy thresholds in boundary layer shear flows. *Phys. Rev. Fluids* **5**, 062401(R)

1. M. Beneitez, Y. Duguet, P. Schlatter & D. S. Henningson (2019). Edge tracking in spatially developing boundary layer flows. *J. Fluid Mech.* **881**, 164-181

### CONFERENCE CONTRIBUTIONS

Y. Duguet, M. Beneitez, P. Schlatter & D. S. Henningson. What can we learn from the Edge about bypass transition. ETC17, Torino, Italy Sep. 2019

C. Vavaliaris, M. Beneitez & D. S. Henningson. Optimal initial perturbations and the minimal seed of Blasius boundary-layer flow. ETC17, Torino, Italy Sep. 2019

M. Beneitez, Y. Duguet, P. Schlatter & D. S. Henningson. What can we learn from the Edge about bypass transition. IUTAM transition 2019, London, U.K.

Sep. 2019

M. Beneitez, Y. Duguet, P. Schlatter & D. S. Henningson. The edge for boundary layer flows. Euromech Colloquium 598: Coherent structures in wall-bounded turbulence: new directions in a classical problem, London, U.K. Aug. 2018

M. Beneitez, M. Rubio-Rubio & A. Sevilla. On the steady structure of vertical slender liquid jets with non-uniform outlet velocity profiles. 11th European Fluid Mechanics Conference, Seville, Spain. Sept. 2016

TEACHING  
EXPERIENCE

Teaching assistant in the courses Mechanics I and Mechanics II during the academic years (2017-2018), (2018-2019), (2019-2020) and (2020-2021).

Supervision of C. Vavaliaris during an internship project about nonlinear optima in the Blasius boundary layer. (2018)

ACADEMIC AWARDS

Young Researcher Grant. 11th European Fluid Mechanics Conference in Seville, Spain. 2016

Swedish-Spanish Scholarship for the promotion of education and studies. Swedish Foreign Trade association for studies in Sweden. 2016

Scholarship Margit and Folke Pehrzon Foundation. Scholarship for Master studies in Sweden. 2016

COMPUTER SKILLS

**Operating systems** Linux, Windows and MacOS.

**Mathematical computing** Julia and Matlab.

**Programming languages** C, Fortran and Python.

**Engineering Software** OpenFOAM, Ansys FLUENT, Mathcad, Simulink, Multisim, Abaqus.

**Graphic Design** Photoshop, Illustrator, Sony Vegas.

LANGUAGE SKILLS

**Spanish:** Mother tongue. **English:** advanced **Swedish:** advanced **German:** medium