

Stanford



Niccolo Tonicello

Postdoctoral Scholar, Mechanical Engineering

Bio

BIO

Niccolò Tonicello graduated at University of Padova in 2015 in Aerospace Engineering and subsequently continued his studies on numerical methods for fluid dynamics pursuing a Master of Science in Mathematical Engineering at the same institution. He obtained his Ph.D. at the University of Rouen (France) with a thesis on High-order Spectral Element Methods for Compressible Turbulent Flows under the supervision of professors Luc Vervisch and Guido Lodato. After the conclusion of his Ph.D. in 2021, he obtained a short-term fellowship at Scuola Internazionale di Studi Superiori Avanzati in Trieste (Italy) focused on Reduced-Order Models for Compressible Flows in the group of professor Gianluigi Rozza. Finally, in January 2022 he started a post-doctoral fellowship at Stanford on high-fidelity numerical simulation of hypersonic flows in the group of professor Matthias Ihme.

He has published in a variety of international peer-reviewed scientific journals of computational fluid dynamics, including the Journal of Fluid Mechanics, Journal of Scientific Computing and Computer & Fluids.

STANFORD ADVISORS

- Matthias Ihme, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Turbulence kinetic energy transfers in direct numerical simulation of shock-wave-turbulence interaction in a compression/expansion ramp** *JOURNAL OF FLUID MECHANICS*
Tonicello, N., Lodato, G., Vervisch, L.
2022; 935
- **A Comparative Study from Spectral Analyses of High-Order Methods with Non-Constant Advection Velocities** *JOURNAL OF SCIENTIFIC COMPUTING*
Tonicello, N., Lodato, G., Vervisch, L.
2021; 87 (3)
- **Analysis of High-order Explicit LES Dynamic Modeling Applied to Airfoil Flows** *FLOW TURBULENCE AND COMBUSTION*
Tonicello, N., Lodato, G., Vervisch, L.
2022; 108 (1): 77-104
- **Large-Eddy Simulation of Bypass Transition on a Zero-Pressure-Gradient Flat Plate Using the Spectral-Element Dynamic Model** *FLOW TURBULENCE AND COMBUSTION*
Lodato, G., Tonicello, N., Pinto, B.
2021; 107 (4): 845-874
- **Entropy preserving low dissipative shock capturing with wave-characteristic based sensor for high-order methods** *COMPUTERS & FLUIDS*
Tonicello, N., Lodato, G., Vervisch, L.
2020; 197