

## INVITED LECTURERS

ALEXEI MAILYBAEV  
*IMPA, Rio de Janeiro, Brazil*

ALOIS STEINDL  
*TU Wien, Vienna, Austria*

ANDREI METRIKINE  
*TU Delft, Delft, The Netherlands*

CARLOS MAZZILLI  
*EPUSP, São Paulo, Brazil*

CELSO PESCE  
*EPUSP, São Paulo, Brazil*

GUILHERME FRANZINI  
*EPUSP, São Paulo, Brazil*

JOSÉ ROBERTO PIQUEIRA  
*EPUSP, São Paulo, Brazil*

LIVIJA CVETICANIN  
*UNS, Novi Sad, Serbia*

LUIS ANTONIO AGUIRRE  
*UFMG, Belo Horizonte, Brazil*

MARCELO SAVI  
*UFRJ, Rio de Janeiro, Brazil*

PAULO GONÇALVES  
*PUC-Rio, Rio de Janeiro, Brazil*

ROBERTO CAMASSA  
*UNC, Chapel Hill, USA*

STEFANO LENCI  
*UnivPM, Ancona, Italy*

## ADMISSION AND FINANCIAL SUPPORT

Applicants must apply **from February 11<sup>th</sup>, 2019 to June 28<sup>th</sup>, 2019**, through the Advanced School website <http://www.usp.br/spnl>.

There are up to 60 vacancies for Brazilian and up to 60 for foreigner candidates. They should be graduate students undergoing research in the field of nonlinear dynamics. Post-docs and undergraduate students may be considered, provided they are enrolled in related research programmes. For application requirements, please consult the website.

The selected candidates will be informed **from late February to mid June**, according to the **first come first serve basis**. Selected candidates, provided they are not yet recipients of FAPESP scholarships, **including those from abroad**, will receive **financial support for their travel and accommodation expenses** during the Advanced School. Participants are expected to present their on-going research in poster sessions and interact with the lecturers.

All lectures will be in English. Lecture notes can be downloaded from the website. Instructions will be timely sent to participants.

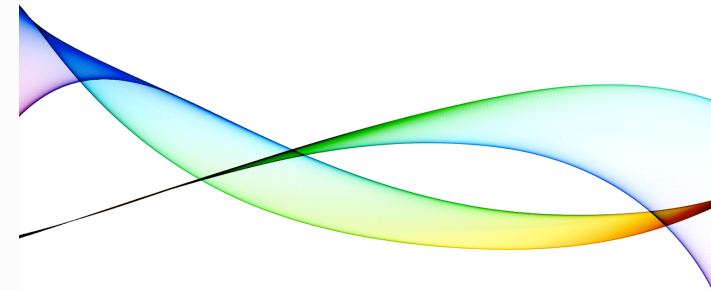
**FOR FURTHER INFORMATION, PLEASE CONTACT:**

[asnld@usp.br](mailto:asnld@usp.br).

São Paulo, July 29th - August 9th, 2019



SÃO PAULO SCHOOL OF ADVANCED SCIENCES ON  
**NONLINEAR DYNAMICS**



### ORGANISERS

JRC Piqueira  
GR Franzini  
CP Pesce  
CEN Mazzilli



# NONLINEAR DYNAMICS

The course is formatted in 31 modules of theoretical lectures, four modules for the participants' poster presentations and technical visits.

The subject is addressed in a transdisciplinary way, to encompass applications in engineering mechanics (civil, mechanical, mechatronics, naval, offshore) and electrical engineering, from fundamental topics to mathematical modelling.

Participants will be exposed to state-of-art knowledge in the areas of the lecturers' expertise. Participantes will also get acquainted with the research infrastructure and opportunities for graduate studies at Escola Politécnica, University of São Paulo.

The course can also be assessed through the transmission of the Escola Politecnica **Youtube channel**.

The following topics will be addressed: fundamentals of dynamics; stability theory; nonlinear oscillators, asymptotic methods; bifurcation theory; dynamical integrity; structural reliability; nonlinear vibration modes; reduced-order models; nonlinear system identification, nonlinear control, nonlinear fluid dynamics; applications.

## WEEK 1

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
08:00-10:00	Opening	Module 4 <i>Lenci</i>	Students' posters	Module 10 <i>Mailybaev</i>	Module 13 <i>Steindl</i>
10:00-10:15	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:15-12:15	Module 1 <i>Cveticanin</i>	Module 5 <i>Cveticanin</i>	Students' posters	Module 11 <i>Mailybaev</i>	Module 14 <i>Steindl</i>
12:15-13:45	Lunch	Lunch	Lunch	Lunch	Lunch
13:45-15:45	Module 2 <i>Lenci</i>	Module 6 <i>Cveticanin</i>	Module 8 <i>Aguirre</i>	Module 12 <i>Mailybaev</i>	Module 15 <i>Steindl</i>
15:45-16:00	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
16:00-18:00	Module 3 <i>Lenci</i>	Module 7 <i>Aguirre</i>	Module 9 <i>Aguirre</i>	Lab visits	Module 16 <i>Gonçalves</i>

## WEEK 2

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
08:00-10:00	Bloco 17 <i>Gonçalves</i>	Bloco 21 <i>Savi</i>	Students' posters	Bloco 27 <i>Metrikine</i>	Bloco 29 <i>Franzini</i>
10:00-10:15	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:15-12:15	Bloco 18 <i>Gonçalves</i>	Bloco 22 <i>Camassa</i>	Students' posters	Bloco 28 <i>Pesce</i>	Bloco 30 <i>Mazzilli</i>
12:15-13:45	Almoço	Almoço	Almoço	Almoço	Almoço
13:45-15:45	Bloco 19 <i>Savi</i>	Bloco 23 <i>Camassa</i>	Bloco 25 <i>Metrikine</i>	Technical visit	Bloco 31 <i>Piqueira</i>
15:45-16:00	Coffee Break	Coffee Break	Coffee Break		Coffee Break
16:00-18:00	Bloco 20 <i>Savi</i>	Bloco 24 <i>Camassa</i>	Bloco 26 <i>Metrikine</i>	Closing	Closing