

Online lectures, July 2021

The Research School is organised in 2 parts.

Part 1, July 2021: online lectures via the IT platform <https://cimpa.uol.de/>

The lectures will be totally available starting with July 1.

There will be an interactive period supported by the IT platform during the period July 12-23.

Part 2, July 11-22 2022: live, at Sao Carlos.

Part 1 contains the lectures listed below.

A. Maria Ruas, Juan Nuno Ballesteros, Raul Sinha, and Roberta Wik Atique

Hypersurfaces : algebraic methods and singularities.

1. Basics on classification of singularities.
2. Singularities of germs of functions.

B. Mihai Tibar and Dirk Siersma

1. Milnor fibrations and their topology. Bouquet theorems.
2. Nonisolated singularity and their topology.
3. Polar degree of projective hypersurfaces.

C. Laurentiu Maxim

Topology of complex projective hypersurfaces and of their complements
4 lectures.

D. Ying Chen, Raimundo Araujo dos Santos, and Mihai Tibar

1. Real Milnor fibrations.
2. Newton polyhedra and mixed singularities.

E. Renato Dias, Cezar Joita, and Mihai Tibar

1. Bifurcation of polynomial maps in real and complex settings.
2. Topology of polynomial maps : singularities at infinity, bouquet theorem for isolated singularities ; nonisolated singularities, connectivity of fibres. Applications.

F. Jim Damon

Medical Imaging, Skeletal structures and singularities.
3 lectures.

[Anne Frühbis-Krüger](#), U Oldenburg, Germany - admin of the online courses

[Mihai Tibar](#), U Lille, France - coordinator of the online part