



Welcome to the 10th Festival de Théorie

Phase Dynamics

July 1 – 26, 2019

Goal of the meeting

- Focus on topics of interest for astrophysics & fusion
- Promote new ideas, start common work
- Train PhD students & post-docs

- ▶ 2001 — Self-Organization & Transport in Electromagnetic Turbulence
- ▶ 2003 — Relaxation Processes in Magnetised Plasmas
- ▶ 2005 — Turb. overshoot & resonant structures in fusion & astrophysics
- ▶ 2007 — Bifurcations, fronts & boundary layers in Magnetised Plasmas
- ▶ 2009 — Rotation & Momentum Transport in Magnetised Plasmas
- ▶ 2011 — General Principles for Relaxation & Self-Organization
- ▶ 2013 — Reduced models of complex plasma dynamics
- ▶ 2015 — Pathways to Relaxation in Fusion & Astrophysical Plasmas
- ▶ 2017 — Avalanching & Self-Organization in Plasmas: 30 Years of BTW
- ▶ 2019 — *Phase dynamics* **10th edition – WELCOME!**
 - nice mix of young attendees & young at heart
 - repeated enthusiasts & new faces
 - EU/US/China/S.Korea/Japan/Russia/India/Canada/Australia/ ... [& UK ☺]

- Attendance encompasses plasma, astro & geophysics, fluids, statistical physics, etc.

Ideas/spirit we wish to promote:

- the Festival is inter-disciplinary; emphasis on Fundamental ideas & results
- pace is `unhurried`, on purpose & talks are relatively long
 - go in depth,
 - focus on physics in a general language
 - do not hesitate to spend time on introducing context & key ideas before diving in details
 - community jargon should be kept to a minimum
- feel free to admit when something is (yet) unclear → triggers interesting discussion

A somewhat unusual format (certainly for plasma & fusion meetings)

- the late P. K. Kaw once said:
 - "The IAEA is where you talk all about things you know.*
 - The Festival is where you discuss things you don't yet know."*

Up-to-date information on www.festival-theorie.org

- | | | | |
|---------|--|--|---|
| 8:00 | Opening of the building | Please
NO internet
during talks | |
| ■ 9:00 | Tutorial (55' + 25' Q&A) | | |
| 10:30 | Coffee Break | | |
| ■ 11:00 | Topical (30'+15') / Short Contrib. (20'+10') / Work | | |
| 12:30 | Mid-day break (~2h) | | |
| ■ 14:30 | Tutorial / Overview (55' + 25') | | |
| 16:00 | Coffee Break | | |
| ■ 16:15 | Lectures for students (~1h15') / Work | | – day before Tutorial
– blackboard (& ppt) |
| 18:30 | Closing | | |

Lectures:

- attendance: ~“young scientists” only (PhD & postdocs)
- Advice to **lecturers**:
 - use the **blackboard(s)**
 - day prior to tutorial: introduce key concepts for following morning
- Advice to **students**:
 - ask questions, stop lecturer at any time

Posters & short talks (3rd & 4th week) → if interested let me know

- 2nd edition → thanks to all Advisors for their contributions
- congratulations to 12 selected Fellows

Fellows	E-mail address	Advisors	E-mail address
Yi Zhang	y.zhang4869@pku.edu.cn	Pat Diamond	diamondph@gmail.com
Chang-Chun Chen	chc422@ucsd.edu	Boris Breizman	breizman@mail.utexas.edu
Dimitrii Kiramov	kiramov.dmitry@gmail.com	Pat Diamond	diamondph@gmail.com
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Robin Heinonen	rheinone@ucsd.edu	Maxime Lesur / Xavier Garbet	maxime.lesur@gmail.com ; xavier.garbet@cea.fr
Camille Gillot	Camille.GILLOT@cea.fr		
Artur Kryzhanovskyy	kryzhanovskyy@igi.cnr.it		

- More today @ 16h00 (4pm) = Projects presentation “Fellows meet advisors” 😊

Main organiser: David Zarzoso

Proposed by Alain Bécoulet (head of CEA/IRFM)

Funded by CEA/IRFM

- **Objective:** to recognize a young scientist who (i) made notable contributions to recent past editions of the Festival and (ii) has demonstrated, by his research achievements, strong potential for future success & major contributions to Festival topics

Preference to candidates w/o tenure or equivalent position

- **Jury:**

Pr. P.H. Diamond (UCSD, chair)

Dr. X. Garbet (CEA, co-chair)

Pr. D. Hughes (U. Leeds)

Pr. L. Wang (U. Huazhong)

Pr. C-S. Liu (U. Maryland)

Pr. S. Cappello (Consorzio RFX)

Dr. H. Che (U. Alabama)

Dr. G. Dif-Pradalier (CEA, scientific secretary)

1st recipient: Dr. Haihong Che

- **Ceremony @ conference dinner Thursday, July 11**

Public conference [in French...]

« What is the Void Full of? »

Dr Etienne Klein, physicist & philosopher

Friday, July 5 @ 18h30

Hôtel de ville, Aix-en-Provence

Followed by a cocktail

In honour of Uriel Frisch

Seminal contributions & (selected aspects)
of a history of plasma physics

Monday, July 8

1959-2019
60 ans
CEA Cadarache

Conférence-Débat dans le cadre du Festival de Théorie 2019

Vendredi
05
Juillet
18 h 30

De quoi le
VIDE
est-il plein ?

ÉTIENNE KLEIN,
Directeur de recherche au CEA, docteur
en philosophie des sciences, producteur de La
conversation scientifique sur France Culture

Entre Néant et Existence, la notion de vide est com-
plexe. Son histoire, pleine... de rebondissements,
se confond avec celle de la physique. Elle vous sera
contée par Étienne Klein.

Aix-en-Provence - Hôtel de ville - Salle des États de Provence
Entrée libre et gratuite dans la limite des places disponibles

- Participants are encouraged to **acknowledge the Festival** in papers & oral presentations whenever appropriate
→ We need this support to keep the Festival going!
- several **books published (WorldScientific)**...but a painful process

Relaxation Dynamics in Laboratory & Astrophysical Plasmas (2010)



Rotation & Momentum Transport in Magnetized Plasmas (2015)



- New website www.festival-theorie.org starting...
→ publish online slides, written contributions, lectures & recordings of tutorials & lectures
→ Please sign online publishing agreement

Banquet @ Aquabella Hotel & spa – downtown Aix-en-Provence

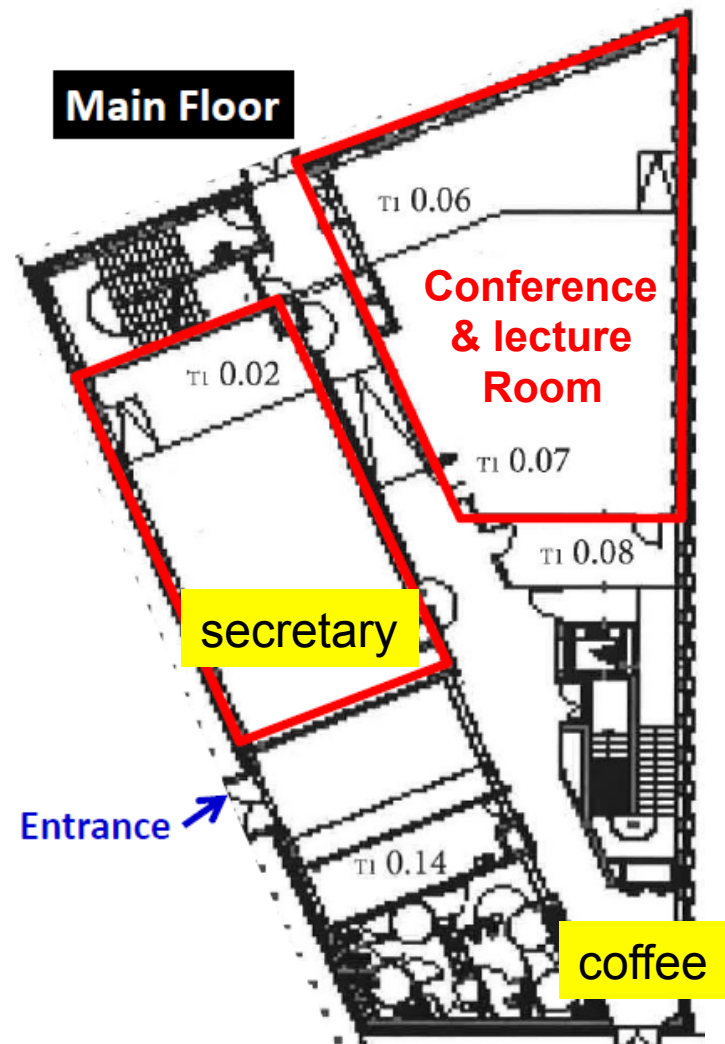
■ Cocktail & meal → 20 euro per guest (small contribution to actual fee)

→ *firm reservation by July 2nd, please*

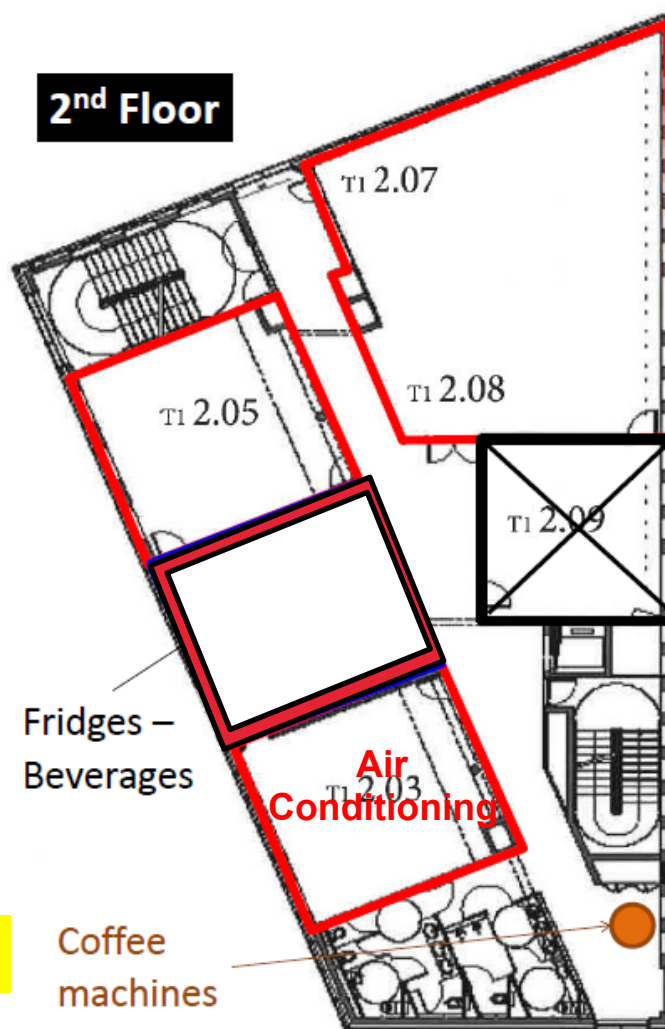


Wi-Fi network: personal key & password + chart → ask @ Secretary

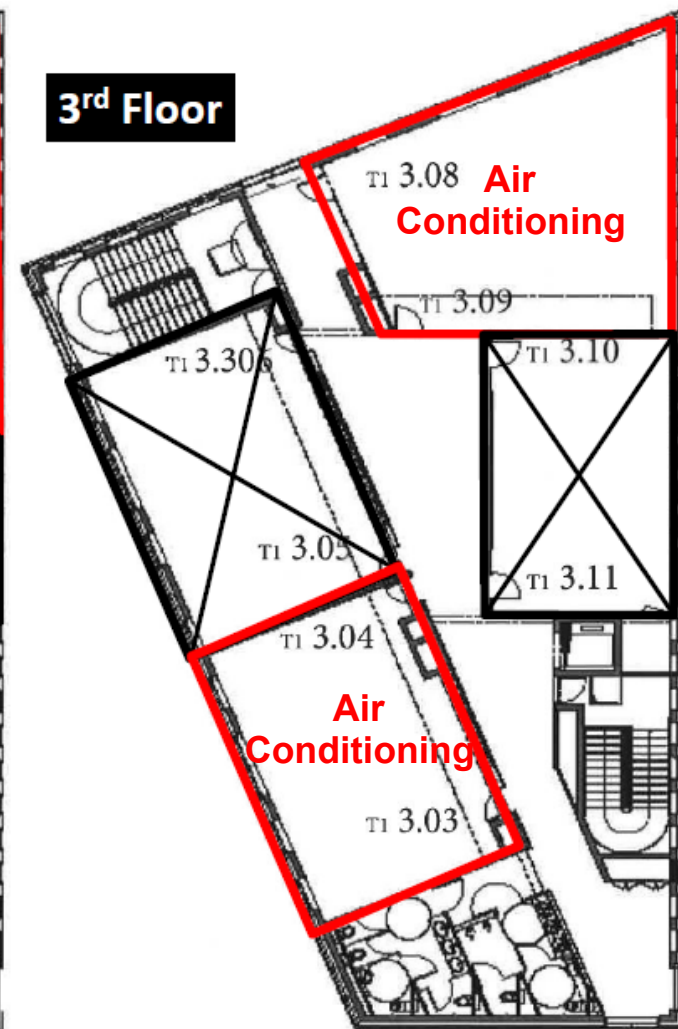
Main Floor

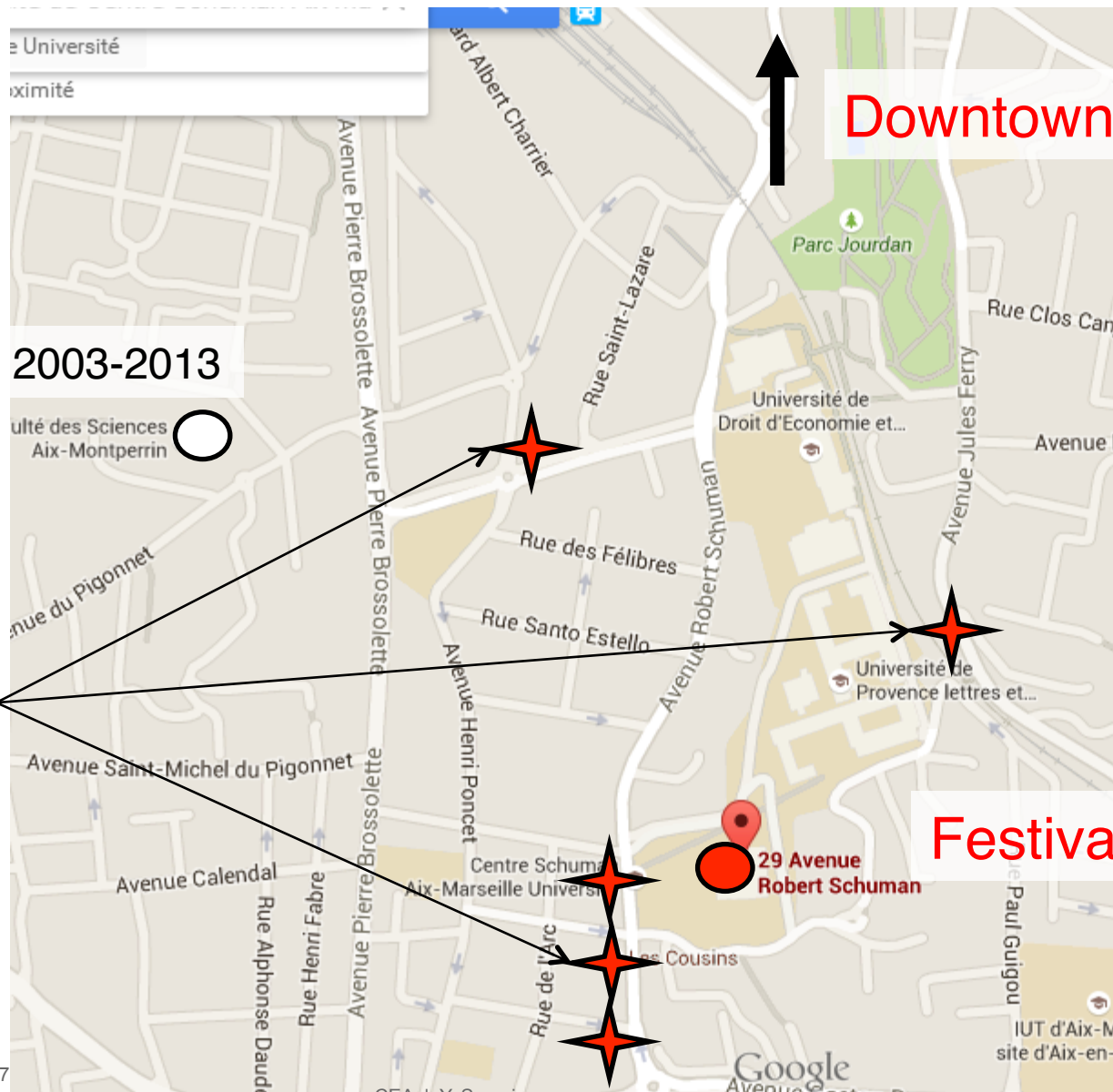


2nd Floor



3rd Floor





Downtown restaurants

Festivals 2003-2013

Restaurants

Festival