SFERA-III *

1st Summer School & Doctoral Colloquium

September, 9th- 13th, 2019

CNRS- PROMES, Odeillo, France

Location and dates :

This event will be held from September 9th 8:00 am to September 13th 2019 4:00 pm at the premises of the CNRS-PROMES laboratory, 7 rue du Four Solaire, 66120 Font-Romeu FRANCE.

The Summer School is opened to researchers, especially early stage researchers, from both academia and industry. The doctoral colloquium is opened to PhD students from the organizations participating in SFERA-III (https://sfera3.sollab.eu/), who should submit an abstract of the work to be presented. Although there is no obligation for them to attend both events, students will be given this opportunity with limited travel expenses.

Registration deadline :

To apply to the SFERA-III Summer School and/or Doctoral Colloquium, you must complete the companion registration form and submit it before 12:00 pm (Paris time) by July 26th 2019 to Romie Lopez at romie.lopez@promes.cnrs.fr. Your personal information and data will be treated as strictly confidential with respect to the principles of the General Data Protection Regulation (GDPR) (EU) 2016/679 and will be deleted no later than 2 months after the end of the event.

Please pay a special attention that submitting this form does not guarantee your attendance at the SFERA-III Summer School and Doctoral Colloquium. Since the number of places is limited (80 places), all the forms will be reviewed in terms of order of inscription on first-come, first-served basis, but a minimum of 4 places will be guaranteed to each organization that is member of the SFERA-III project. A 2nd level selection of participants will take place afterwards to insure the heterogeneity of the participants (countries, maximum number of participants per organization, gender, type of organization and other). Further to the selection, the selected candidates will receive a confirmation email inviting them to join the event and providing further details on accommodation.

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Important information :

• *There are no registration / participation fees. However, all the travel, accommodation and food expenses must be covered by the participants.*

• *Registration will be held from 8:00 am to 8:45 am on September 9th, 2019 at the premises of the PROMES laboratory (or on arrival on Wednesday 11th for those attending the Doctoral Colloquium only). A name badge will be delivered to you and an attendance sheet will be provided for signature at your arrival.*

• *The lunches will be served at the CNRS-PROMES laboratory's restaurant. Please pay attention that the total amount of the lunches should be paid the first day of the event by the participant in cash to restaurant responsible Didier Rives. The tariff by lunch is 12.77 €. Your food preferences / allergies / intolerances will be taken into account within the application form.*

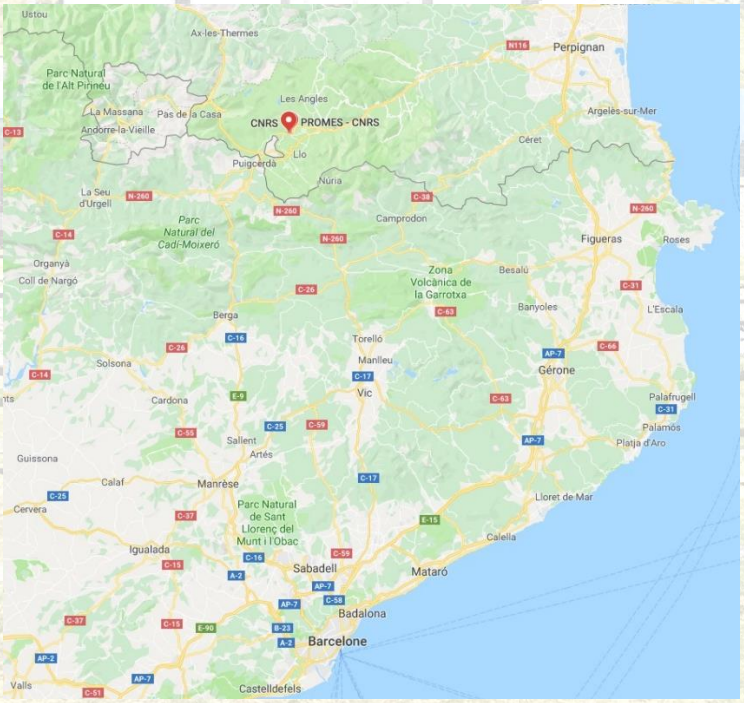
• *Coffee breaks will be offered by CNRS-PROMES laboratory.*

• *A buffet will be offered by CNRS on Monday September 9th evening. A dinner will also be offered on Wednesday 11th, 2019 (place to be confirmed).*

Accommodation :

A non-exhaustive list of hotels and restaurants (for evening meals) will be provided before late July. Please wait for the confirmation of your registration acceptance before booking your hotel.

Access to CNRS/PROMES (Font-Romeu, France) :



<u>From Barcelona international airport (recommended) :</u>
2h30' driving
or 3h15' by train to Puigcerda (Spain/France border) and taxi to Font-Romeu

<u>From Perpignan airport (domestic flights only) :</u>
1h30' driving
or shuttle to bus/train station in Perpignan city and 2h by bus from Perpignan city to Font-Romeu

September 9th-11th, 2019

Summer School

"Thermal energy storage systems, solar fields and new cycles for future CSP plants"

Organizers

CNRS and University of Evora

Chairs

Alain Ferrière, CNRS-PROMES & Diogo Canavarro, University of Evora

Program

Day 1 : Monday, September 9th, 2019

9:00 am	Welcome address, by Alain Dollet (CNRS). Introduction of the School, by Alain Ferrière (CNRS) & Diogo Canavarro (Univ. Evora)
9:15 am	Introductive talk, by Alain Ferriere (CNRS) **"The CSP technologies: market status and opportunities for R&D"**
10:00 am	*Coffee break*
10:30 am	Thermal Energy Storage - Class 1, by Eduardo Zarza (CIEMAT) **"TES for solar thermal power plants: introduction, commercial systems, integration issues and latent heat"**
11:30 am	Thermal Energy Storage - Class 2, by Anna Chiara Tizzoni/Salvatore Sau (ENEA) **"Novel molten salts for TES application in CSP plants"**
12:00 am	*Lunch at CNRS restaurant*
2:00 pm	Thermal Energy Storage - Class 3, by Sylvie Rougé (CEA) **"Thermochemical TES: challenges and issues"**
2:45 pm	Thermal Energy Storage - Class 4, by Pierre Garcia (CEA) **"TES performance assessment"**
3:30 pm	*Coffee break*
4:00 pm	Thermal Energy Storage - Case study, by Shahab Rohani (Fraunhofer ISE) **"Lessons learned from a lab-scale thermocline storage"**
5:00 pm	*End of 1st day session*
7:00 pm	*Buffet offered by CNRS*

Day 2 : Tuesday, September 10th, 2019

9:00 am	Introductive lecture, by Manuel Romero (IMDEA Energy) **"Next generation of CSP plants: technology developments and market opportunities"**
10:00 am	*Coffee break*
10:30 am	Collectors - Class 1, by Diogo Canavarro (Univ Evora) **"New concepts of line focus and point focus collectors"**
11:00 am	Collectors - Class 2, by Jose González-Aguilar (IMDEA Energy) **"New concepts of heliostats for solar tower systems"**
11:30 am	Collectors - Case study, by Shahab Rohani (Fraunhofer ISE) **"A design tool for heliostat field layout"**
12:30 pm	*Lunch at CNRS restaurant*
2:00 pm	Cycles - Introductive lecture, by Eduardo Zarza (CIEMAT) **"Thermodynamic cycles for CSP plants: state-of-the-art and challenges"**
3:30 pm	Cycles - Class 1, by Manuel Romero (IMDEA Energy) **"sCO_2 cycles for CSP plants: challenges and issues"**
4:00 pm	*Coffee break*
4:30 pm	Cycles - Class 2, by Daniel Benitez (DLR) **"Hybrid CSP-PV plants: examples of configurations and simulation using Greenius"**
5:30 pm:	*End of 2nd day session*

Day 3 : Wednesday, September 11th, 2019

8:45 am	*Transfer to Themis solar tower platform in Targasonne*
9:00 am	**Visit of Themis solar tower platform (Targasonne)**
10:30 am	*Coffee break and transfer to Odeillo*
11:00 am	**Visit of CNRS solar facilities (Solar furnace/Odeillo)**
12:30 pm	*Lunch at CNRS restaurant*
2:00 pm	***End of the Summer School***

Note: The visits are organized for both events (Summer School and Doctoral Colloquium)

September 11th-13th, 2019

1st Doctoral Colloquium of SFERA-III

Organizers

CNRS-PROMES (PhD students)

Session Chairs

Alain Dollet, CNRS-PROMES
Sixto Malato, CIEMAT
Robert Pitz-Paal, DLR
Aldo Steinfeld, ETH-Z

Draft program

PhD students from the SFERA-III laboratories will have the opportunity to present their work and share their experience with each other during this colloquium. They should submit a 1-page abstract (template provided) before July 26th 2019. The final detailed program prepared from the abstracts received will be available early August.

Day 1 : Wednesday, September 11th, 2019

8:45 am	*Transfer to Themis solar tower platform in Targasonne*
9:00 am	**Visit of Themis solar tower platform (Targasonne)**
10:30 am	*Coffee break and transfer to Odeillo*
11:00 am	**Visit of CNRS solar facilities (Solar furnace/Odeillo)**
12:30 pm	*Lunch at CNRS restaurant*
2:00 pm	**Activities proposed by CNRS PhD students**
7:30 pm	*Dinner offered by CNRS (place to be defined)*

Day 2 : Thursday, September 12th, 2019

9:00 am	**1st Session**
10:30 am	*Coffee break*
11:00 am	**1st Session** (cont.)
12:30 pm	*Lunch at CNRS restaurant*
2:00 pm	**2nd Session**

3:30 pm *Coffee break*

4:00 pm **2nd Session** (cont.)

5:30 pm *End of 2nd day session*

Day 3 : Friday, September 13th, 2019

8:30 am **3rd Session**

10:00 am *Coffee break*

10:30 am **3rd Session** (cont.)

11:30 am **4th Session**

12:30 pm *Lunch at CNRS restaurant*

2:00 pm **4th Session** (cont.)

4:00 pm ***End of the Doctoral Colloquium***