

New Frontiers in Physics

ICNFP 2014

28 July - 6 August 2014
Kolymbari, OAC, Crete, Greece

Welcome!



3rd International Conference on New Frontiers in Physics

from 28 July 2014 to 6 August 2014
Europe/Athens timezone

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60th CERN anniversary session

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3rd International Conference on New Frontiers in Physics

from 28 to 29 July FAIR Workshop
from 29 to 30 July Lectures
from 31 July to 6 August Main Conference

The International Conference on new Frontiers in Physics aims to promote scientific exchange and development of novel ideas in science with a particular accent on interdisciplinarity.

The conference will bring together worldwide experts and promising young scientists working on experimental and theoretical aspects of particle, nuclear, heavy ion and astro-particle physics and cosmology, with colleagues from other disciplines, for example solid state physics, mathematics, mathematical physics, quantum optics, quantum entanglement and other.

The conference will also host a workshop on "**Opportunities from FAIR to other low energy facilities**".

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•International Advisory Committee

Halina Abramowicz (Tel Aviv University, Israel)

Charalampos Anastasiou (ETH Zurich, Switzerland)

Ignatios Antoniadis (CERN, Switzerland)

Marco Genovese (INRIM, Torino, Italy)

Rohini Godbole (Indian Institute of Science, Bangalore, India)

Elias Kiritsis (APC and University of Crete, Greece)

Shahn Majid (Queen Mary, University of London, UK)

Angela V. Olinto (University of Chicago, USA)

Valery Rubakov (INR, Moscow, Russia)

Valerio Scarani (National University of Singapore, Singapore)

Eduard Shuryak (Stony Brook University, USA)

Emmanuel Tsesmelis (CERN, Switzerland and University of Oxford, UK)

Urs Wiedemann (CERN, Switzerland)

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•Conference chairs

Larissa Bravina (University of Oslo, Norway)

Yiota Foka (GSI, Germany)

Sonia Kabana (University of Nantes and Subatech, France)

•Local organizing committee

Anastasios Charitonidis (National Technical University of Athens, Greece)

Panagiotis Charitos (CERN, Switzerland)

Jana Crkovska (University of Oslo, Norway; Czech Technical University in Prague, Czech Republic)

Gyulnara Eyyubova (SINP MSU, Russia and Czech Technical University in Prague, Czech Republic)

Evangelos Gazis (National Technical University of Athens, Greece)

Emanuela Larentzakis (OAC, Kolymbari, Greece)

Stefanos Leontsinis (National Technical University of Athens, Greece)

Paola Lindenberg, conference secretary (GSI, Germany)

Jeremi Niedziela (Warsaw University of Technology, Poland)

Maciej Szymanski (Warsaw University of Technology, Poland)

Anna Zaborowska (Warsaw University of Technology, Poland)

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- At registration please complete the various lists namely :
 - **Meals:** register nr of people and preferences: <http://goo.gl/KdmgNm>
 - **Excursion:** Knossos, Monasteries, new added: Falassarna beach
 - **Social Events:** participation and nr of people
 - **Cultural Events:** Visit of the Etz Hayyim old synagogue of Chania for the Friday 1st Aug evening service 19h30 for interested people (contact icnfp2014@gmail.com)
- **For accompanied people, please arrange with registration desk**



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3rd International Conference on New Frontiers in Physics

from 28 to 29 July FAIR Workshop
from 29 to 30 July Lectures
from 31 July to 6 August Main Conference

•Updates of program

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The conference will also host a workshop on "**Opportunities from FAIR to other low energy facilities**".

•Other materials



The conference will be hosted in the Conference Center of the Orthodox Academy of Creta (OAC), an exceptionally beautiful location only a few meters from the mediteranean sea.

Starts 28 Jul 2014 07:00
Ends 6 Aug 2014 22:40
Europe/Athens

- 1st Bulletin
- Opera gala program
- Poster
- Slides





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< **Mon 28/07** Tue 29/07 Wed 30/07 Thu 31/07 Fri 01/08 Sat 02/08 Sun 03/08 Mon 04/08 >

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FAIR Workshop

08:00

Opening Session		08:30 - 08:45
Status of the FAIR Project		<i>Oliver KESTER</i>
09:00	<i>Kolymbari, Crete, Greece</i>	08:45 - 09:15
HESR@FAIR: The High-Energy Storage Ring (HESR)		<i>Dieter PRASUHN</i>
	<i>Kolymbari, Crete, Greece</i>	09:15 - 09:45
Status of the Day-1 experiment at HESR		<i>Dr. XU HUAGEN</i>
10:00	<i>Kolymbari, Crete, Greece</i>	09:45 - 10:15
Proton electromagnetic form factors: present status and future perspectives at PANDA		<i>Egle TOMASI-GUSTAFSSON</i>
	<i>Kolymbari, Crete, Greece</i>	10:15 - 10:45
Break		
11:00	<i>Kolymbari, Crete, Greece</i>	10:45 - 11:15

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Physics

August 2014
AC, Crete, Greece

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•FAIR workshop 28-29 July

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Workshop "Opportunities from FAIR to other low energy facilities" 28-29 July

The conference will host a workshop focusing on different physics topics pursued at the FAIR facility. In addition, opportunities at other low energy facilities, such as NICA, SPS, RHIC and fixed target experiments at LHC will be discussed.



FAIR - The new Facility for Antiproton and Ion Research in Europe

FAIR is a new, unique international accelerator facility for the research with antiprotons and ions. It is ready to be built within the coming years in Darmstadt, Germany. The major part of the budget will be provided by the Federal Republic of Germany, together with the German State of Hesse. Other fractions will be funded by international partners from Europe and overseas.



The core of FAIR, a double-ring accelerator (SIS100/SIS300 heavy ion synchrotron) with a circumference of 1100 meters, will be associated with a complex system of cooler and storage rings and experimental setups. The synchrotron will deliver ion beams of unprecedented intensities and energies. Thus also intensive secondary beams can be produced, providing antiprotons and exotic nuclei.

FAIR will be built near the premises of the renowned physical research institute GSI Helmholtzzentrum für Schwerionenforschung GmbH. The GSI facility will serve as pre-accelerator and injector for the new complex.

The new FAIR facility, where various physics programs can be operated in parallel, will offer outstanding research opportunities and discovery potential for about 3000 scientists from about 50 countries.

FAIR allows to carry out several physics programs in parallel, covering four major fields:

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• Student lectures 28 July afternoon

16:00	Lecture on Accelerators	<i>Oliver KESTER</i>
	<i>Kolymbari, Crete, Greece</i>	16:00 - 16:45
	Compressed Baryonic Matter	<i>Christian STURM</i>
17:00	<i>Kolymbari, Crete, Greece</i>	16:45 - 17:30
	Atomic physics in extreme fields at FAIR	<i>Dr. Alexandre GUMBERIDZE</i>
18:00	<i>Kolymbari, Crete, Greece</i>	17:30 - 18:15
	NUSTAR	<i>Thomas AUMANN</i>
	<i>Kolymbari, Crete, Greece</i>	18:15 - 19:00
19:00		

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- **General lectures for interdisciplinary audience**
- **30 July**

09:00	Quarkonia as a probe of QCD matter: from LHC to FAIR	Christoph BLUME	08:30 - 09:15
	Quantum optics	Sandu POPOESCU	09:15 - 10:00
10:00	Direct Dark Matter Searches Review	Jules GASCON	10:00 - 10:45
	Break		10:45 - 11:05
11:00	Testing General Relativity with Atomic Clocks	Ruxandra BONDARESCU	

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- **Wednesday 30 July (evening) in hotel AVRA, Kolymbari**
 - 19:00 – 20:00 old car exposition
 - 20:00 – 21:00 buffet dinner
 - 21:00 - 21:45 public lecture by Alvaro DE RUJULA “The Higgs, the vacuum and nothingness”
- **Thursday 31 July (evening) in OAC amphitheater**
 - 21:00 - 22:00 Opera Gala, Artists: Kalliopi Petrou, Soprano, Alessia Toffanin, piano, Andrea Dainese, flute, <https://indico.cern.ch/event/277650/material/5/1.pdf>
- **Friday 1 August (evening) at Sailing Club, Chania**
 - 21:00 - 21:45 Public talk “Echo from the beginning of the Universe” (in greek) by Dimitri NANOPOULOS and exhibition (9h00-12h00).

THE HIGGS, THE VACUUM AND NOTHINGNESS

(Searching for the Higgs boson, and beyond it)

Το Higgs, το κενόν και το τίποτα
(Ψάχνοντας για το μποζόνιο του Higgs και πέρα από αυτό)

Alvaro De Rujula
Wednesday 30 July at 21:00
Hotel AVRA, Open Air Amphitheater

Alvaro De Rujula
Τετάρτη 30 Ιουλίου 21:00
Ξενοδοχείο ΑΥΡΑ, Ανοιχτό Αμφιθέατρο



Opera Gala

OAC Auditorium

Kolymbari, Crete, Greece

July 31st 2014, 9PM



Kalliopi Petrou
Soprano



Alessia Toffanin
Piano



Andrea Dainese
Flute

*3rd International Conference
on New Frontiers in Physics*

*Kolymbari, Crete, Greece
July 28th-August 6th 2014*

Program

Giacomo Meyerbeer (1791-1864)
Aria of Dinorah: “Ombra leggera”,
from the opera “Dinorah”

Jean Louis Tulou (1786-1865)
“Ecco ridente il cielo”, Duet for piano and flute,
from G. Rossini's opera :“Il barbiere di Siviglia”

Vincenzo Bellini (1801-1835)
Scene and Aria of Amina :
“Oh! Se una volta sola, Ah non credea mirarti,
Ah non giunge”,
from the opera “La Sonnambula”

Gaetano Donizetti (1797-1848)
Sonata for flute and piano

Gaetano Donizetti (1797-1848)
Cavatina of Norina: “So anch'io la virtù magica”,
from the opera “Don Pasquale”

Camille Saint Saëns (1835-1921)
Song for voice, piano and flute: “Une flûte invisible”

Giacomo Puccini (1858-1924)
Aria of Musetta, “Quando men vò”,
from the opera “Bohème”

Ermanno Wolf Ferrari (1876-1948)
Aria of Susanna : “Oh gioia la nube leggera ”,
from the opera “Il segreto di Susanna”

ΗΧΩ ΑΠΟ ΤΗΝ ΑΡΧΗ ΤΟΥ ΣΥΜΠΑΝΤΟΣ

ECHO FROM THE BEGINNING OF THE UNIVERSE

Καθηγητής Δημήτρης Νανόπουλος
Ημερομηνία: Παρασκευή 1η Αυγούστου 21:00
Ιστιοπλοικός Όμιλος Χανίων, Νεώριο Μόρο

Prof Dimitris Nanopoulos
Friday 1 August at 21:00
Chania Sailing Club, Neorio Moro

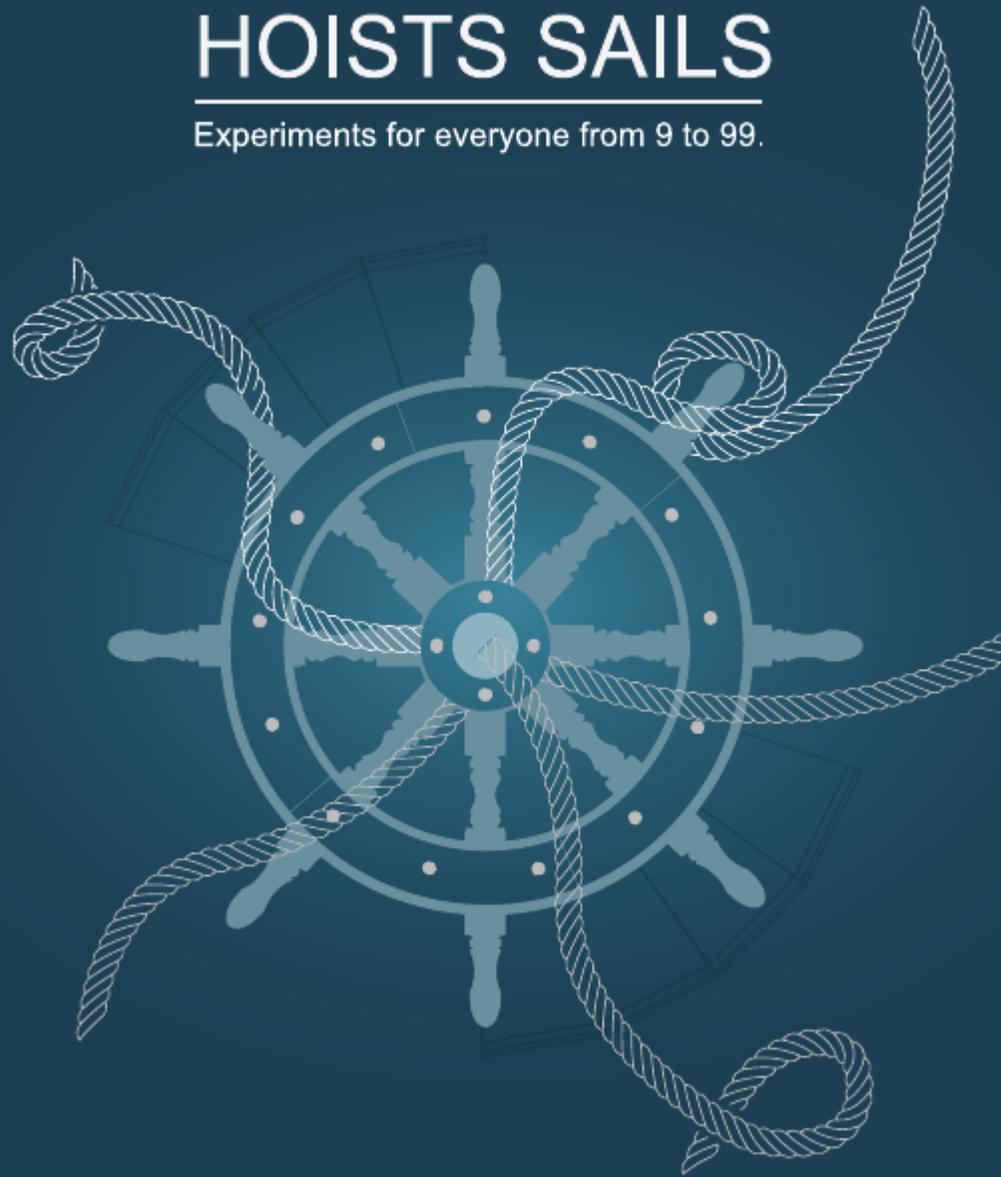


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SCIENCE HOISTS SAILS

Experiments for everyone from 9 to 99.



Physics

August 2014

Chania, Crete, Greece

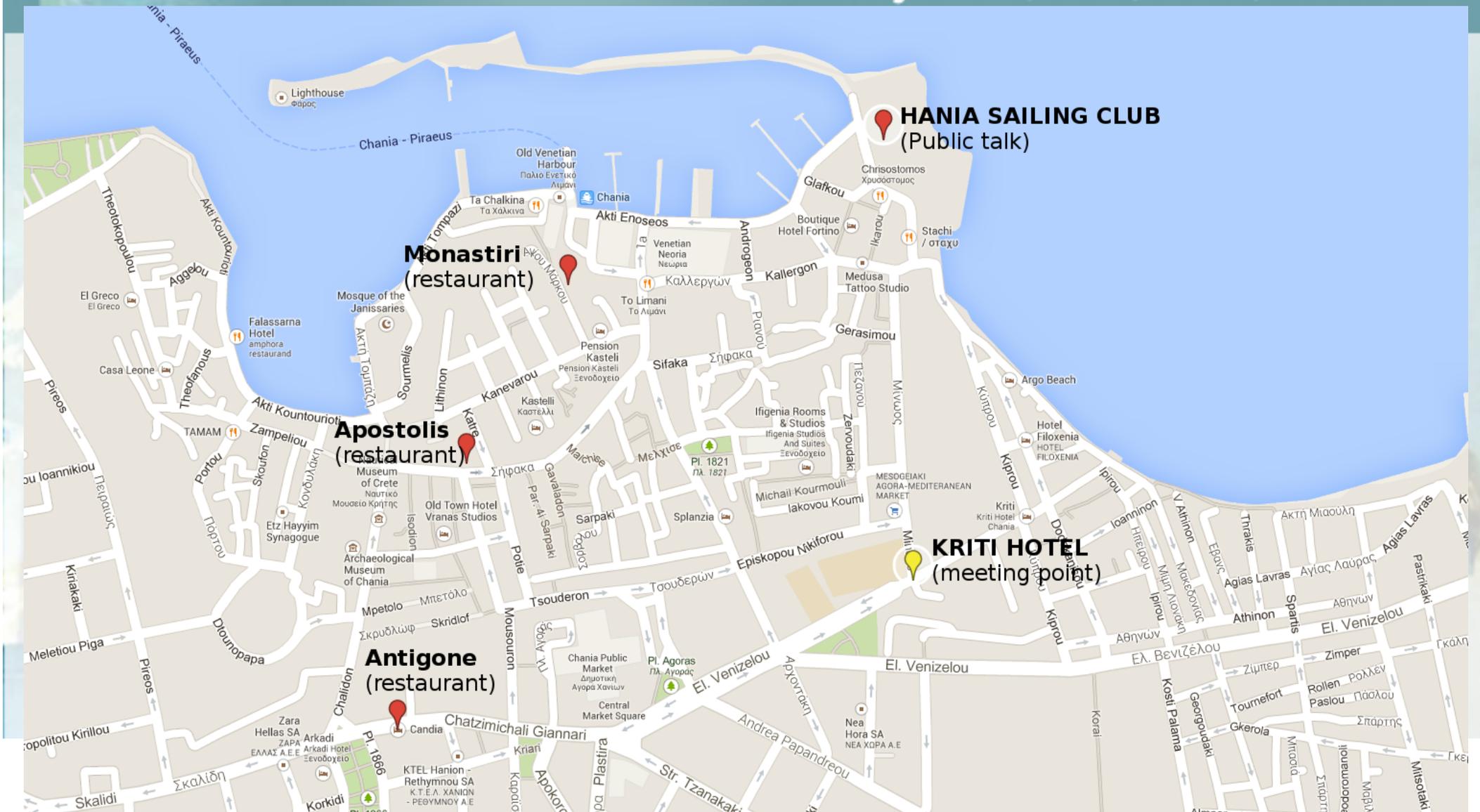
Friday 01 August | 10:00 - 13:00 | Chania Sailing Club, Neorio Moro

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• **Saturday 2 August**

- Poster Session and MasterClass Demo
- Buffet and Wine Tasting
- **Please post the poster during the lunch break**
- For details please contact Gyulnara Eyyubova
(gyulnara.eyyubova@cern.ch) and CC to ICNFP2014@gmail.com

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• **Sunday, 3 Aug, Excursion to Monasteries**

- 6:00 Departure for trip to the top of Metamorposi monastery
- 7:00 - 8:30 Liturgy
- 8:30 - 9:30 Coffee and small tour in Metamorposi
- 10:00 - 11:00 Walk through the mountain path to Agia Kyriaki Monastery
- 11:00-12:00 Tour in Agia Kyriaki Monastery
- 12:15-13:30 Visit of Chrysopigi Monastery (16th century)
- 14:00 Lunch in Chania center
- 15:30 Agia Triada (short tour for 30 minutes) and Gouverneto Monastery
- 18:00 Return to OAC
- 20:00 Dinner

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• **Sunday, 3 Aug, Excursion to Knossos**

- 6:30 Departure for Knossos
- 9:30 Visit Knossos
- 11:00 Departure from Knossos to museum
- 11:30 Visit museum Heraklion
- 13:00 Departure from museum
- 13:30 Lunch in Heraklion Taverna
- 15:00 Departure for OAC, possible stop for coffee in Rethymno
- 18:00 Arrival at OAC
- 20:00 Dinner

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• **Sunday, 3 Aug, Excursion to Falassarna**

- 10:00 Departure
- 13:30 lunch at
• a local taverna
- 18:00 Departure
for OAC
- 19:00 Arrival in OAC



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•Conference Dinner and Cretan Night, Monday, 4 August

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• **Tuesday, 5 August**

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- **Interdisciplinary Conference in an Academy promoting dialogue**
- **Enjoy the Conference and the Place !!**

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•Sponsors and organizing institutes

CERN - European Organization for Nuclear Research

EMMI - ExtreMe Matter Institute

GSI - Helmholtzzentrum für Schwerionenforschung

FAIR - Facility for Antiproton and Ion Research

University of Oslo

Subatech

University of Nantes

NTUA - National Technical University of Athens

Warsaw University of Technology

