

Ions for Cancer Therapy, Material and Space Science

<http://indico.cern.ch/e/ions2017>



Yiota Foka

on behalf of the organising committee

26 - 30 aug, Great Arsenali Conference Center, Chania, Greece

Ions for Cancer Therapy, Material and Space Science

26 – 30 august 2017, <http://indico.cern.ch/e/ions2017>

26 and 27 august Public Events with involvement of directors of education

28 august coffee with scientists with involvement of Technical University Crete

Thanks to Organizing Committee !



Published Articles

Accelerating News ARIES

<http://acceleratingnews.web.cern.ch/content/accelerating-health-and-space-research>

CERN Courier

Understanding the fundamental laws of nature is the dream of physicists and the mandate of research institutions such as CERN. Many of us, however, are often faced with the question: “Why is this useful?” Motivated by the need to enhance awareness of the benefits of fundamental research to society and to facilitate future progress, a workshop and public event titled Ions for Cancer Therapy, Space Research and Material Science took place on 28–30 August in Chania, Crete.

Participants received a comprehensive overview of the current status of particle therapy for cancer. The number of working clinical facilities, mainly using protons, is rising rapidly. Nearly all new clinics use active beam scanning to provide more conformal doses and also the possibility to modulate fields for enhanced sparing of critical healthy tissue. Experts from several of the leading European centres – including the National Centre of Oncological Hadron therapy (CNAO) in Italy, the Heidelberg Ion-Beam



Around 50 people took part in the Crete meeting on hadron therapy.

Therapy Center (HIT) in Germany and the Paul Scherrer Institute (PSI) in Switzerland – summarised their clinical and research activities. All centres are engaged in clinical trials to provide evidence on the efficacy for different tumour entities.

The history of particle therapy is a prime example of society benefiting from

basic research, as was illustrated from the perspectives of CERN and the GSI centre in Germany as early drivers of the technology. GSI pioneered carbon therapy in Europe in the 1990s with a pilot study that eventually included 440 patients. Subsequently, a number of clinical centres were opened, the HIT in Heidelberg being the first. CERN ▷

ALICE Matters to come

Welcome to Chania



Venues at old port



Welcome Drink

**Neorio Moro
Saturday**



**Neorio Moro
Saturday**

KAM Sunday

Coffee shop Neorio Moro

Saturday



Curiosity Team and Creations



The Team

Technical University Chania
Aristotle Uni Thessaloniki, ATLAS
Creations, ATLAS
St. Petersburg, ALICE
Warsaw ALICE
GSI

Curiosity Team, Schoolchildren from Veroia and Chania, Katerina Foka





Masterclasses

Creations

Poster Expo CERN

Experiments, Gadgets

Seaview

Creations



Curiosity Team

Curiosity Team with their teacher



ALICE Masterclass



Experiments from Marge





Experiments of Grigory Feofilov, CERN ALICE Open Days



Sunday Public Lectures



Sunday Public Lectures

CERN and Accelerators
Education Projects and Beamline for Schools
Heavy Ions and ALICE
Hadron Therapy

Presentations
Films and Animations
Skype visit at ALICE Control Room at CERN
Opera Singing

Directors of education in Crete



Education



- ▣ Ζητά απαντήσεις σε ερω
- ▣ Προωθεί τα όρια της τεχ

Beamline for Schools



Beamline for schools

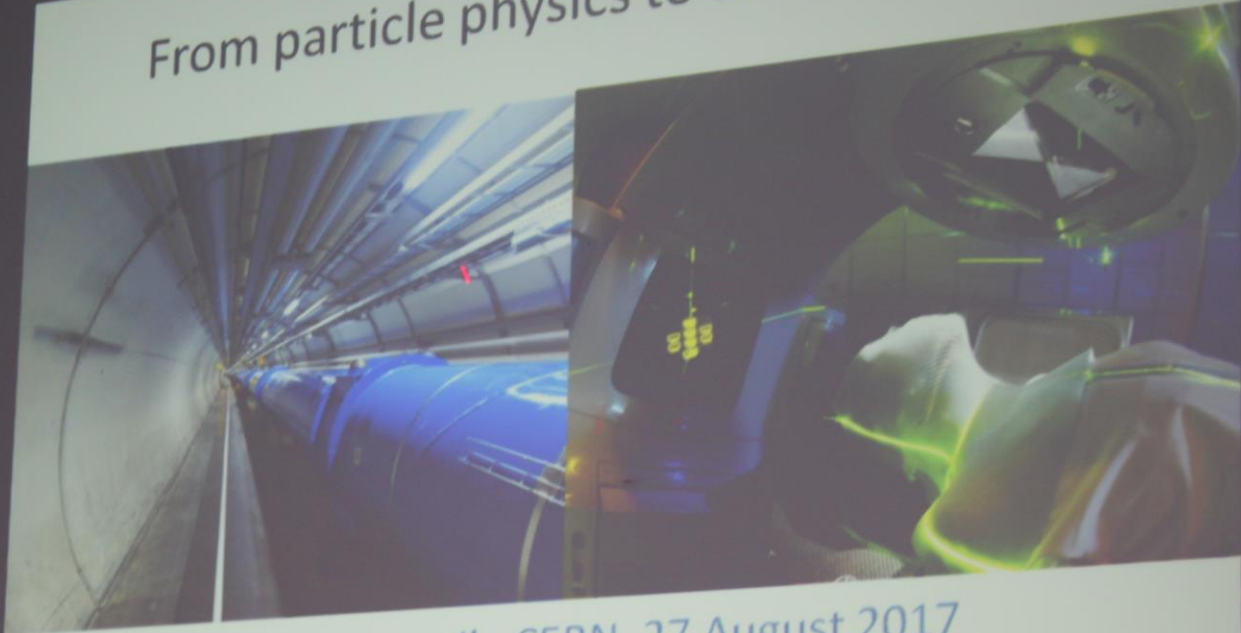


Hadron Therapy, ENLIGHT



Hadron Therapy

From particle physics to cancer therapy



Manjit Dosanjh, CERN, 27 August 2017



Δημόσια Ομιλία στα πλαίσια του Διεθνούς Συνεδρίου
Public talk at Great Arsenali on the occasion of International Workshop
ons for Cancer Therapy, Space Research and Material Science

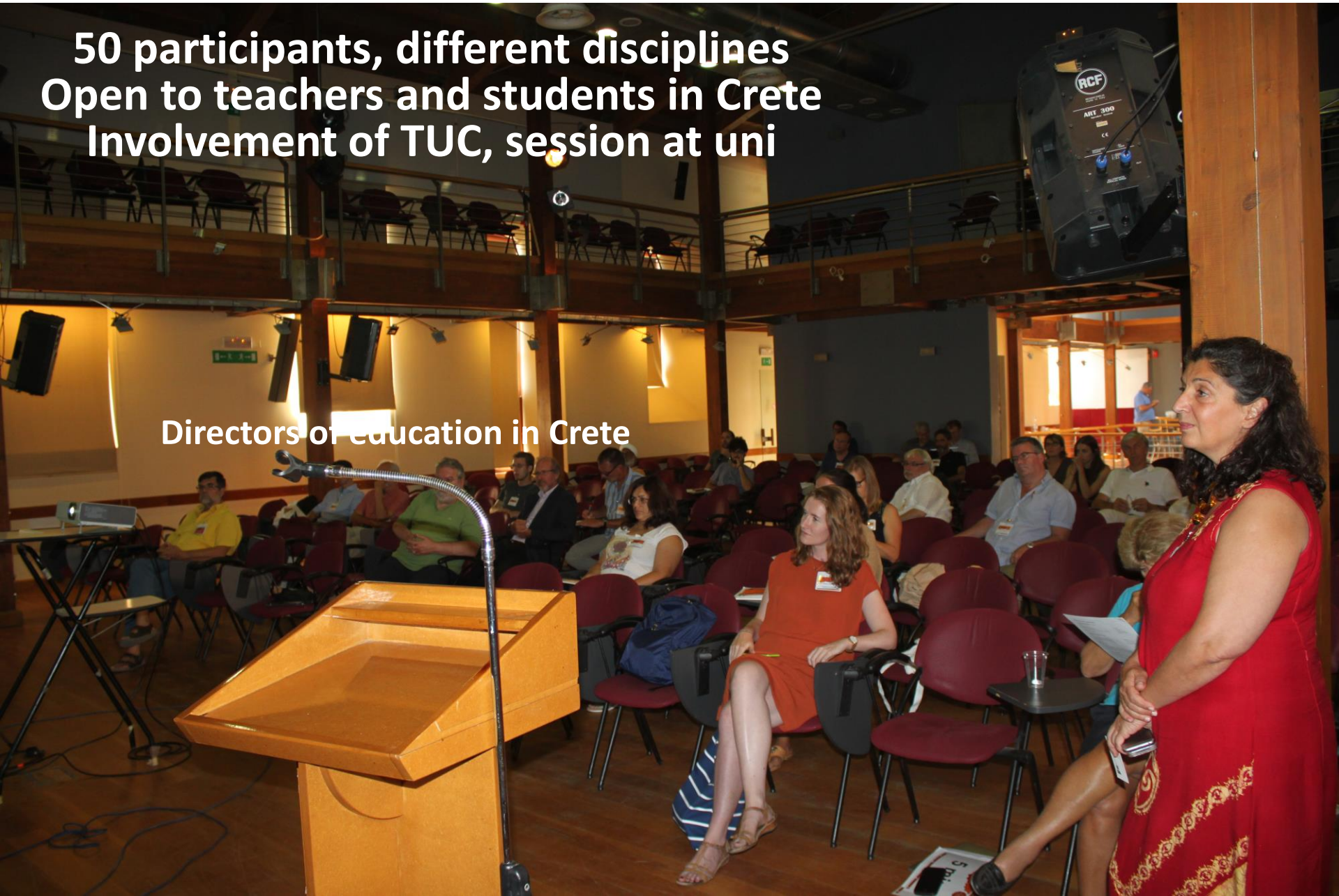
Soprano Kalliopi Petrou



Three Day Workshop

50 participants, different disciplines
Open to teachers and students in Crete
Involvement of TUC, session at uni

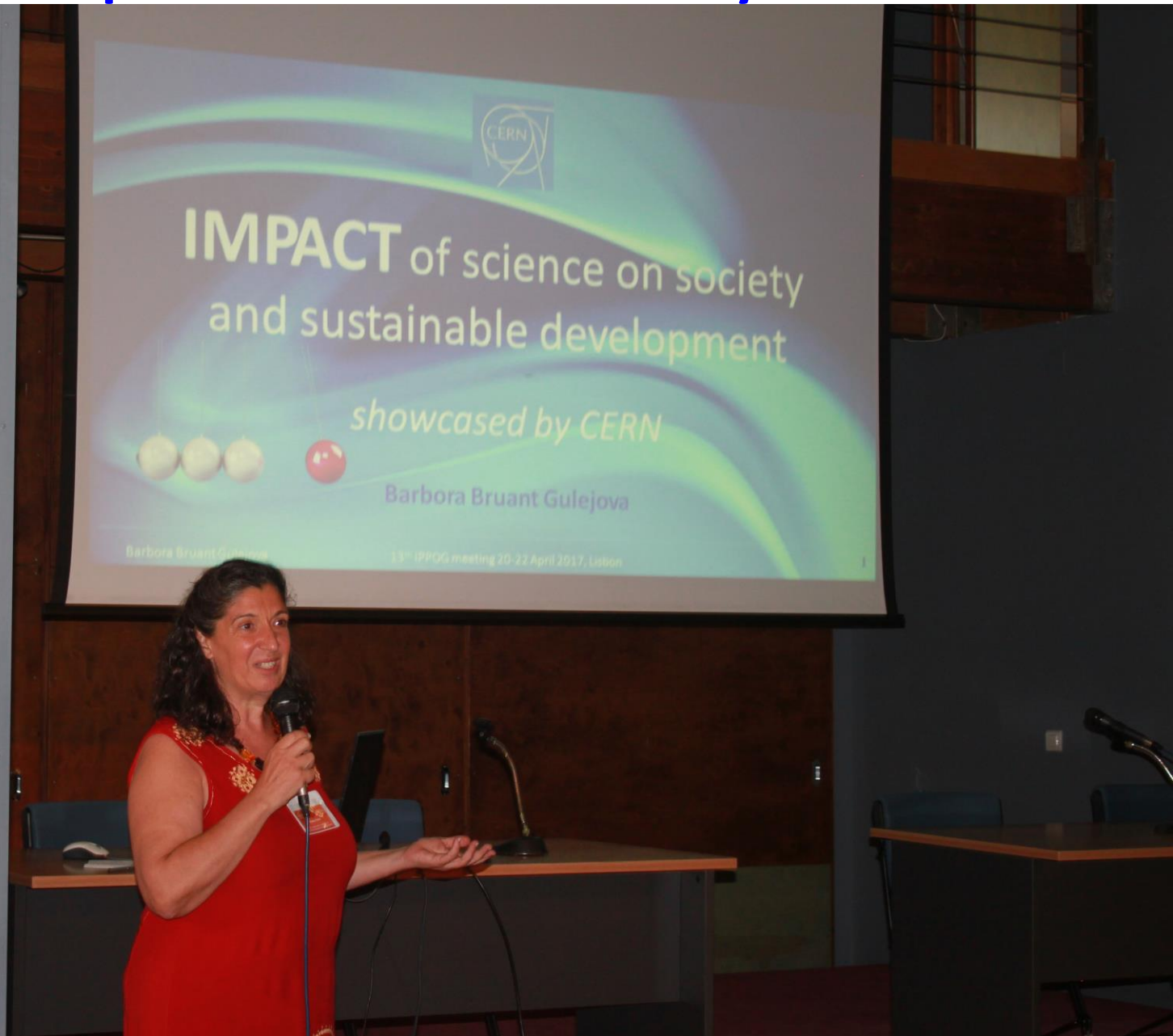
Directors of education in Crete





Barbora's talk in Lisbon

Impact of science on society



Creations and Education Projects



University of Athens
Nikos Tsirintanis
George Vasileiadis

The CREATIONS project and Educational programs and opportunities at CERN and Greece

- European and International efforts/resources
- National Masterclasses
- CERN expositions
- Science fairs in Greece
- Teacher resources in the framework of CREATIONS
- The HYPATIA tool for University students

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Technical University of Crete

RESEARCH AND
INNOVATIONS, TECHNOLOGY TRANSFER

Founder of company

Costas BALAS Ph.D, Professor
President of the Greek Photonics Platform
Director, Electronics Lab,
School of Electrical, and Computer Engineering,
Technical University of Crete,
e-mail: cbalas@electronics.tuc.gr .
Per
<http://electronics.tuc.gr/>



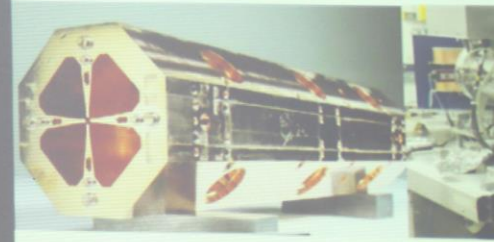
Wednesday coffee,
together with oncologist
womens health,
endoscopic cameras,

TERA Foundation and ADAM



ADAM
an ADVANCED ONCOTHERAPY company

Hadron linac devel



Dr Alberto Dogiovanni
Workshop on Ions for Cancer Therapy
28-30 August 2017, Chania (GR)

ARIES



Welcome Drink



Cretan delicacies and Russian Caviar !



Group Photo



Workshop Dinner



International Participation !



Closing and Subjects

Reaching Out at Different Scientific Communities

....to be continued !!



Subjects ?



- **Societal Benefits, Science for Health**
C. Balas, K. Kalir, C. Kourkoulou, C. Montesi, N. Papadogiorgaki, S. Stashy
- **Particle Therapy: Projects and Centres**
D. Acis, E. Dimovski, G. Feofilov, M. Pullia, J. Sero, T. Suvitkar
- **Treatment Planning and Imaging**
G. Dedes, C. Graeff, W. Kozłowska, D. Kuchuk, M. Schanz
- **Radiation Studies and Space Research**
C. La Teana, M. Campbell, L. Schaller, C. Schuy
- **Accelerators**
A. Degiovanni, M. Pullia, E. Schier, M. Vetterli, W. Wunsh
- **Status and Perspectives of Biomedicine, Biophysics and Material Science**
M. Donath, A. Goldfarb, R. Fleckner

Programme



- **Societal Benefits, Science for Health**
- C. Balas, K. Kaler, C. Kourkoumeli, C. Montesi, N. Papadogiannis, S. Sheehy

- **Particle Therapy: Projects and Centres**
- O. Actis, E. Dimovasili, G. Feofilov, M. Pullia, J. Seco, T. Stoehlker

- **Treatment Planning and Imaging**
- G. Dedes, C. Graeff, W. Kozłowska, D. Roehrich, M. Schanz

- **Radiation Studies and Space Research**
- C. La Tessa, M. Campbell, L. Sabatier, C. Schuy

- **Accelerators**
- A. Degiovanni, M. Pullia, B. Schlitt, M. Vretenar, W. Wunsch

- **Status and Perspectives of Biomedicine, Biophysics and Material Science**
- M. Dosanjh, A. Golubev, R. Pleskac



5th International Conference on New Frontiers in Physics ICNFP2016

VOTED OUT of ORGANISATION INDICO RESTRICTIONS for STUDENTS

6-14 July 2016
Europe/Athens timezone

Group photo: https://indico.cern.ch/event/442094/attachments/1146525/1956856/ICNFP_2016_Group_Photo.jpg

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- Timetable
- G. Altarelli Memorial Session
- Mini-workshop on MoEDAL
- Mini-workshop on BSM Higgs
- Physics at FAIR-NICA-SPS-RHIC
- Special session on QCD
- Astro-Cosmo-Gravity
- Poster session
- Outreach
- Important Dates
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Outreach

Conceived as single event

associated to ICNFP encouragement and support for a new(born) event !

Program of the Chania Science fair: Friday 8 July 2016

10:00 - 13:30 Morning Session

- Dr.Marge Bardeen (scientific responsible for the US National Undergraduate Program "Quarknet" responsible for the International Particle Physics Outreach Group) *will introduce the students to simple physics experiments.*
- Professor Christina Kourkoumeli (University of Athens, Researcher at CERN, Coordinator of European Outreach programs), Stylianos Yourakis, Nikolaos Tsiropanis and George Vasilakidis (Researchers at the University of Athens): *Analyse real data from the LHC experiments of the ATLAS experiment with the LHCATLAS software which was developed at the University of Athens and used by students around the world.*
- Researchers of the Technical University of Warsaw: *Analyse real data from the LHC accelerator and the ALICE experiment. Search of the quark-gluon plasma, a form of matter created just after the Big Bang.*
- Puzzles, memory games, video, animation and material with the past developments in the state of the art developments in Particle Physics.

20:00 - 22:30 Evening Session

- 20:00 Introduction
- 20:15 - 20:30 Opening event with soprano Calliope Petrou
- 20:30 - 21:30 Talk by Professor Theodoros Tomaras (University of Crete) on "**Gravitational waves: the confirmation which came 100 years after their prediction**"
- 21:30 - 21:45 The music of the Big Bang from Calliope Petrou
- 21:45 - 22:30 Q and A session, Discussion with the audience
- 22:30 End of program



Outreach event, Chania, August 2015

Organising Committee



Y. Foka (GSI, Germany) - chair

C. Balas (Technical University of Crete, Greece)

E. Dimovasili (CERN, Switzerland and Univ. of Cyprus, Cyprus)

C. Graeff (GSI, Germany)

N. Kallithrakas (Technical University of Crete, Greece)

R. Pleskac (GSI, Germany)

E. Tsesmelis (CERN, Switzerland and Univ. of Oxford, UK)

M. Vretenar (CERN, Switzerland)

M. Zervakis (Technical University of Crete, Greece)

E. Andronov (St. Petersburg State Univ., Russia)

K. Foka Sandoval (EPFL, Switzerland)

Ł. Graczykowski (Warsaw Univ. of Technology, Poland)

M. Janik (Warsaw Univ. of Technology, Poland)

A. Katanaeva (Univ. of Barcelona, Spain and St. Petersburg State Univ., Russia)

D. Shukhobodskaia (St. Petersburg State Univ., Russia)

**Well Working Scheme
Attracted Attention**

**Next Invitation
Greek Physics Society
15-18 March 2018 Thessaloniki**

www.eef17.gr