

Showphysics 09

Report of Contributions

Contribution ID: 0

Type: **not specified**

Welcome by the head of PhysiScope

Tuesday, 31 March 2009 09:00 (15 minutes)

Presenter: Prof. RENNER, Christoph

Session Classification: Opening the conference

Contribution ID: 1

Type: **not specified**

Welcome by the head of the Department of physics

Tuesday, 31 March 2009 09:15 (15 minutes)

Presenter: Prof. POHL, Martin (Unige)

Session Classification: Opening the conference

Contribution ID: 2

Type: **not specified**

Welcome by the head of the Department of physics

Contribution ID: 3

Type: **not specified**

General information about the conference

Tuesday, 31 March 2009 09:30 (15 minutes)

Presenter: Dr GAUMER, Olivier (Unige)

Session Classification: Opening the conference

Contribution ID: 4

Type: **not specified**

General info from EPF

Tuesday, 31 March 2009 09:45 (1 hour)

Presenter: Mr RENEMA, Jelmer

Session Classification: General information from EPF

Contribution ID: 5

Type: **not specified**

Physics students Scientific Association, Poland

Tuesday, 31 March 2009 11:15 (30 minutes)

General overview of our organisation and activities (experimental shows, open lectures, laboratory classes etc.).

Presenter: Mr KWIATKOWSKI, Grzegorz

Session Classification: Presentation of the new comers

Contribution ID: 6

Type: **not specified**

Proejes.nl

Tuesday, 31 March 2009 11:45 (45 minutes)

This presentation will introduce the website Proefjes.nl; the word “proefjes” literally means “little science experiments”. The Dutch language website contains do-it-yourself science experiments, aiming at primary school students age 8 to 12 and their teachers. During the presentation, our approach will be discussed in the light of some materials from the website and our teacher workshops.

Presenter: Dr VERWEIJ, Arno (Invited speaker)

Session Classification: Presentation of the new comers

Contribution ID: 7

Type: **not specified**

Proejes.nl

Invited speaker

Contribution ID: 8

Type: **not specified**

DTU ScienceShow, Denmark

Tuesday, 31 March 2009 14:00 (30 minutes)

The DTU ScienceShow has existed since 2001. The people behind are students from the Technical University of Denmark (DTU), who show science in an exciting and instructive way. Our show is a mixture of both physics and chemistry. The show turn to preschool and high school students. Our purpose is to give students an understanding in what science really is about and make up the old prejudice about science. In our shows we demonstrate that science isn't boring, but actually pretty funny and exciting.

Presenter: Ms BROGGER, Line

Session Classification: Presentation of Shows

Contribution ID: 9

Type: **not specified**

Mobile interactive exhibition Wiembus

Tuesday, 31 March 2009 14:30 (30 minutes)

In this presentation we will be talking about our project: mobile interactive exhibition Wiembus. Problematic how we work with children and we also show few special part of the expositions. The topics of the parts will be combined with Coriolis force, gravitation, Bernoulli law.

Presenter: Mr LEGENDZIEWICZ, Jacek

Session Classification: Presentation of Shows

Contribution ID: 10

Type: **not specified**

Fizika Ekspres

Tuesday, 31 March 2009 15:00 (30 minutes)

The problem with science, and particularly physics, in Croatia is multiple, and is not easy to understand. The most notable problem is the lack of interest in public schools, and especially in high schools, about science, about the world that surrounds us. In this presentation we will give our view of the problem, and a method how to solve it. We will also talk about the possibility of a broader community integration in the project as well as our current achievements.

Presenter: Mr BAZULIC, Ivan

Session Classification: Presentation of Shows

Contribution ID: 11

Type: **not specified**

Experimentarium

Tuesday, 31 March 2009 16:45 (30 minutes)

After some general considerations about energy and temperature equilibrium of the planet, we can observe changes induced by variations of different parameters like enforcement of convection or introduction of carbon dioxide inside the atmosphere of a miniature planet.

Presenter: Mr BEECKMANS, Manu

Session Classification: Presentation of Shows

Contribution ID: 12

Type: **not specified**

The Åbo Akademi Physics show

The Åbo Akademi Physics show, began in the mid 90's (although sporadic student initiatives occurred already in the 70's-80's), when the idea of visiting upper secondary schools giving them a well organized lecture on physics studies and interesting demonstrations. During the years the backbone of the show has been experiments with liquid nitrogen (including e.g. the Meissner effect and freezing of roses, rubber gloves and a bell made of lead etc. etc.), various discharge experiments using a Wimshurst's machine and the classic bike wheel gyroscope. At the same time we have tried to look into experiments which initially look very simple, almost trivial, but which in the end displays some fundamental property of nature. The idea is to show that science is all around us, and things can be explored for those with a curious mind. This works perhaps for some in the audience and gives a nice contrast to the "big science" that e.g. superconductivity represents. This "science using everyday tools", is what we would like to discuss in our presentation.

Presenter: Ms SANDBACKA, Stefanie

Contribution ID: 13

Type: **not specified**

Science made simple

Tuesday, 31 March 2009 16:00 (45 minutes)

science made simple are a spin-out company from Cardiff University (University of Wales) who use scientific demonstrations to inspire the next generation of scientists and engineers. In this talk, you will see who science made simple are in the flesh, find out what this award winning science communication company does, and see some of the innovative but simple demonstrations they use that make their shows a success!

Presenter: Mr JAMES, Huw (Invited speaker)

Session Classification: Presentation of Shows

Contribution ID: 14

Type: **not specified**

Science made simple

Science Made Simple are a spin out company from Cardiff University (University of Wales) who use simple scientific demonstrations to inspire the next generation of scientists and engineers. In this talk, you will see who Science Made Simple are in the flesh! Just what this award winning Science Communication company does. See some innovative but simple demonstrations, and why we can all look forward to a life of dullness.

Contribution ID: 15

Type: **not specified**

Rino Foudation

Wednesday, 1 April 2009 09:15 (30 minutes)

In the last few years, the Rino Foundation has grown considerably. This has had a big impact in terms of organization: it is no longer possible for the board to do everything needed for the shows itself. To cope with the increasing work load, while maintaining and improving both quality and size, we have made three important changes. First of all, we have a committee system where volunteers help to create, maintain and improve aspects of the show. Secondly, we are working on improving and extending the automation of several processes, for example the registration of schools and shows. Last, but not least, we are working hard to document all processes and actions taken extensively, so future boards, committees and volunteers can make better decisions. In this talk, we will show how these changes were implemented, and what some possible pitfalls are.

Presenter: Mr VAN DEEN, Merlijn

Session Classification: How to make a good show

Contribution ID: 16

Type: **not specified**

Paradox show

Wednesday, 1 April 2009 09:45 (30 minutes)

“Paradox show “ as a way to choose gifted students and how to improve their interests in science in future. We propose the way of selection and developing the talented children by means of impressive show programme.

Presenter: Ms KAZACHKOVA, Nataliya

Session Classification: How to make a good show

Contribution ID: 17

Type: **not specified**

Palais de la découverte

Wednesday, 1 April 2009 10:15 (45 minutes)

The Palais de la découverte was founded in 1937 by the physics Nobel laureate Jean Perrin. The idea of Perrin was to create a science center where people could attend to lecture demonstrations “à la Faraday”. Today, seventy years after its birth, it is still a very unique place with no equivalent in the world since all scientific topics are presented in detail to the public through experiments, including nuclear and particle physics. With an average of 55 one hour lecture demonstrations per day, more than 16 000 demonstrations are presented each year, 6 000 of which deal with physics. “How to make a good show” might seem an easy task in electrostatics, and a much more difficult one when the demonstration deals with nuclear physics. In fact, each has its own difficulties.

Presenter: Mr FADEL, Kamil (Invited speaker)

Session Classification: How to make a good show

Contribution ID: **18**

Type: **not specified**

PhysiScope

Thursday, 2 April 2009 10:00 (30 minutes)

PhysiScope is a new structure in Switzerland to produce show in physics. It is based in Geneva, and it depends on the University of Geneva. I'll present the organisation of the group, the way people are sharing responsibilities and the way shows are prepared.

Presenter: Dr GAUMER, Olivier

Session Classification: Organisation

Contribution ID: 19

Type: **not specified**

CERN's Globe of innovation, Magic Physics

To be confirmed

Presenter: Dr PELLEQUER, Bernard

Contribution ID: 20

Type: **not specified**

IYA

Thursday, 2 April 2009 09:15 (45 minutes)

Balloon, glass of water and cell phone is a triple/simple demonstration of the expansion, composition and size of the Universe. Blowing the balloon and, at certain moment, drawing a small fuzzy things on it to introduce the galaxies is the beginning. Story-telling about the Big Bang (BB) and history of the Universe continues with a glass of water and introducing one part of the water molecule, hydrogen atom, as the most abundant element in the Universe created in the BB. But where the other part, oxygen, came from? Stars shine, but much more important is that they produce the chemical elements that we all are made of. Hydrogen 'burns' in central part of a star and gives the helium, then helium 'burns' into carbon, and so on. The distance to the Sun, particular star or galaxy we define by time we need to receive cell phone call from there.

Presenter: STANIĆ, Natasa (Invited Speaker)

Session Classification: Organisation

Contribution ID: 21

Type: **not specified**

How to sell your show

Wednesday, 1 April 2009 11:30 (45 minutes)

Media relationship. How to make people know your show. How to contact and deal with media (TV, Radio and written)

Presenter: Ms CHYTIL, Tanya (Invited speaker)

Session Classification: How to sell your show

Contribution ID: 22

Type: **not specified**

The Åbo Akademi Physics show,

Thursday, 2 April 2009 11:00 (30 minutes)

The Åbo Akademi Physics show, began in the mid 90's (although sporadic student initiatives occurred already in the 70's-80's), when the idea of visiting upper secondary schools giving them a well organized lecture on physics studies and interesting demonstrations. During the years the backbone of the show has been experiments with liquid nitrogen (including e.g. the Meissner effect and freezing of roses, rubber gloves and a bell made of lead etc. etc.), various discharge experiments using a Whimshurst's machine and the classic bike wheel gyroscope. At the same time we have tried to look into experiments which initially look very simple, almost trivial, but which in the end displays some fundamental property of nature. The idea is to show that science is all around us, and things can be explored for those with a curious mind. This works perhaps for some in the audience and gives a nice contrast to the "big science" that e.g. superconductivity represents. This "science using everyday tools", is what we would like to discuss in our presentation.

Presenter: Ms SANDBACKA, Stefanie

Session Classification: Presentation of shows

Contribution ID: 23

Type: **not specified**

Physics show

Thursday, 2 April 2009 11:30 (30 minutes)

Physics Show in Sao Polo, Brazil

Presenter: Mr SAAD, Fuad

Session Classification: Presentation of shows

Contribution ID: 24

Type: **not specified**

Visit of the CERN new travelling exhibitoon

Thursday, 2 April 2009 14:00 (2 hours)

UniGE and CERN collaborated to design a brand new travelling exhibition about fundamental research with the Large Hadron Collider as an example.

Session Classification: Visit of the new CERN's travelling exhibition

Contribution ID: 25

Type: **not specified**

Fysikshow Aarhus

Friday, 3 April 2009 09:15 (30 minutes)

We will give a short presentation about our show and other activities, both at the university and other places. We will also discuss some of our new experiments and our organisation.

Presenter: Mr ANDERSEN, Hans Harhoff

Session Classification: Presentation of shows

Contribution ID: 26

Type: **not specified**

The chain experiment project

Thursday, 2 April 2009 12:00 (30 minutes)

Presenter: Mr ZIHERL, Sasa

Session Classification: Presentation of shows

Contribution ID: 27

Type: **not specified**

The Stanisław Lem Garden of Experiences

Friday, 3 April 2009 09:45 (45 minutes)

The Stanisław Lem Garden of Experiences in Krakow, opened in spring 2008, is the first in Poland open-air educational exhibition. It was created in the frame of the EQUAL Community Initiative Programme with significant support from the city of Kraków. At the moment the exhibition is administered by the Museum of Municipal Engineering. There are over 50 interactive exhibits in the Garden, covering mainly area of mechanics, acoustics and optics located in a 6 ha park. The main goal of exhibition is to play and learn, to show that discovering the Laws of Nature may be fun. The exposition is adressed to everyone from children to elderly people. Some experiments are more then just interactive, we call them sensoric, when visitors experience the investigated phenomenon by themselves being a part of the experimental system (eg.the Coriolis force).

Presenter: Mr GOLAB, Marek (Invited speaker)

Session Classification: Presentation of shows

Contribution ID: 28

Type: **not specified**

The wave-particle duality of light

Friday, 3 April 2009 11:00 (30 minutes)

A Mach-Zehnder interferometer (MZI) operated by single photons with photomultiplier detection and oscilloscope and acoustic display is used to demonstrate that light behaves simultaneously as particles and as waves. By averaging single photon events registered by a digital oscilloscope one sees the emergence of the classical fringe pattern.

Presenter: Prof. WEIS, Antoine

Session Classification: Exchanging experiments

Contribution ID: 29

Type: **not specified**

Showing the invisible: inertia, gas and waves

Friday, 3 April 2009 11:30 (30 minutes)

We are members of the Laboratory for Physical Sciences Communication in Trento University; it has been set up in 2002 by Prof. Stefano Oss and it aims to research new educational tools for science.

So we are here to present a small example of our activity and to learn, of course!

You'll feel directly on your skin the difference between weight and mass with a huge inflated balloon! You'll be amazed by the bouncing soap bubbles. And also be prepared to watch the hypnotized worm waving rope!

Presenter: Ms CALZA, Gabriele

Session Classification: Exchanging experiments

Contribution ID: 30

Type: **not specified**

Optical tweezing

Friday, 3 April 2009 12:00 (30 minutes)

Since its first demonstration, optical tweezing, i.e. the capability of manipulating objects on the micro- and nano-metric scale by a focused laser beam exerting a force depending on the refractive index mismatch between the object and its surrounding, has raised a growing interest from many fields of research: physics, biology, medicine, material science, etc. In order to demonstrate the mechanisms of optical trapping, and to allow students to directly observe and manipulate micro-metric objects (latex spheres and living bacteria) we have developed a compact optical tweezer based on a infrared laser source. We will describe our approach and give some perspectives about the use of the device.

Presenter: Dr BONACINA, Luigi

Session Classification: Exchanging experiments

Contribution ID: **31**

Type: **not specified**

Experimental Session

Friday, 3 April 2009 14:00 (1 hour)

In this session experiments discussed in the morning are shown with the designer or the presenter. People will have 1 hour to discuss freely technical details and the way experiments are designed.

Presenter: Prof. GUGLIELMINO, Michela

Session Classification: Experimental session

Contribution ID: 32

Type: **not specified**

Preparing the common show

Friday, 3 April 2009 15:00 (1 hour)

During this hour, material for the common show is checked and collected in the mini van to carry it to the place of the common show.

Presenter: Mr LANDRY, Olivier

Session Classification: Preparing the common show

Contribution ID: 33

Type: **not specified**

Evaluation of the conference and EPF annual meeting

Friday, 3 April 2009 16:30 (1h 30m)

Presenter: Mr RENEMA, Jelmer

Session Classification: Evaluation of the workshop and EPF annual meeting

Contribution ID: 34

Type: **not specified**

Volta's Electrophorus - an old experiment and some interesting questions

Tuesday, 31 March 2009 17:15 (15 minutes)

The Volta's Electrophorus is the simplest and most ancient electrostatic machine. It works from very simple materials: a non-conductive base, a conductive disk and some wool tissue. Using this very simple equipment however you can generate static electricity seemingly without limits: it looks like a perpetuum engine. Here I will present a multimedia, available on the Web, that explains in details how to build the Electrophorus: this is aimed to teachers that can reproduce using scrap materials the device. The multimedia is also a communication tool that arises some physical questions: is the electrostatic energy generated from nothing ? why it works if you do the right sequence of apparently useless actions but it doesn't work if you omit some of them ? why it works better if the metallic disc surface is bad shaped ?

The aim of this speech is propose a communication tool that complements the experiment: empowers the teacher to duplicate the experiment, explains the principles and offers some food for thought that is rooted in the complexity of even seemingly simple phenomena.

Presenter: Mr TOGNONI, Carlo

Session Classification: Presentation of Shows