

# INTERNATIONAL SCHOOL of Theory & Analysis in Particle Physics

[31 JANUARY - 11 FEBRUARY 2011, ISTANBUL, TURKEY]

This is a 12 day school on Theory & Analysis in Particle Physics. The school is to be held in English with a maximum of 50 students. The first part will focus more on the theory side and the second part, separated by a social activity day, on the analysis side. The target audience is the 4th year undergrad and early graduate students.

The theory week will focus on introduction to Particle Physics, Quantum Field Theory and the Standard Model. The analysis week will cover the analysis tools, programming and simulation techniques followed by a black box analysis game in the "LHC Olympics" style. The knowledge acquired during lectures will be solidified through nightly homeworks followed by discussions on subsequent mornings.

## [CONTACT]

email: [istapp2011@gmail.com](mailto:istapp2011@gmail.com)  
fax : +41 22 766 9100

## [APPLICATION]

Deadline: 25 December 2010  
<http://physics.dogus.edu.tr/ISTAPP2011>

## [SPONSORS]



## [LECTURERS]

Juan Antonio Aguilar-Saavedra (Granada U., Spain)  
Kazem Azizi (Dogus U., Turkey)  
Orhan Çakır (Ankara U., Turkey)  
Durmuş Ali Demir (IYTE, Turkey)-TBC  
Daniel Froidevaux (CERN, Switzerland)  
Umut Gürsoy (CERN, Switzerland)  
Tobias Hurth (Mainz U., Germany)  
Can Kozçaz (CERN, Switzerland)  
Wolfgang Lerche (CERN, Switzerland)-TBC  
Erkan Özcan (UCL, UK & Boğaziçi U., Turkey)  
Altuğ Özpineci (METU, Turkey)  
Sara Pasquetti (QMU, UK)  
Joerg Stelzer (DESY, Germany)  
Nefer Şenoğuz (Doğuş U., Turkey)  
Gökhan Ünel (UCI, USA)

## [COVERED TOPICS]

### Introduction

- Particle Physics Basics
- Feynman Calculus
- Basics of Quantum Field Theory

### Standard Model of Particle Physics

- Electroweak Theory
- Spontaneous Symmetry Breaking
- Basics of Quantum Chromodynamics

### Experimental Techniques

- Particle Detector Basics
- Monte Carlo Techniques
- Event Generators
- Detector Simulations

### Data Analysis Tools

- Unix, C/C++
- Root
- Statistical Analysis
- Analysis Workflow

### Advanced Topics

- Beyond the Standard Model Theories
- Introduction to String Theory
- Data Analysis Game

## [INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE]

Juan Antonio Aguilar-Saavedra (Granada U., Spain) Taylan Akdoğan (Boğaziçi U., Turkey) Durmuş Ali Demir (IYTE, Turkey) John Ellis (CERN, Switzerland) Fabiola Gianotti (CERN, Switzerland) Tobias Hurth (Mainz U., Germany) Peter Jenni (CERN, Switzerland) Kostas Kordas (Thessaloniki U., Greece) Christine Kourkouvelis (Athens U., Greece) Antonio Onofre (LIP, Portugal) Saleh Sultansoy (TOBB ETU, Turkey) Ömer Yavaş (Ankara U., Turkey)

## [ORGANIZATION COMMITTEE]

Serkant Ali Çetin (Doğuş U., Turkey) Samim Erhan (UCLA, USA)  
Can Kozçaz (CERN, Switzerland) Altuğ Özpineci (METU, Turkey) Erkan Özcan (UCL, UK & Boğaziçi U., Turkey) Gülşen Önengüt (CU, Turkey) Gökhan Ünel (UCI, USA)

## [LOCAL ORGANIZATION COMMITTEE]

Serkant Ali Çetin (Doğuş U.)  
Kazem Azizi (Dogus U.) Burak Budanur (Dogus U.)  
Nihan Katırcı (Dogus U.) Nefer Şenoğuz (Dogus U.)

The Maiden's Tower (Turkish: Kız Kulesi), also known in the ancient Greek and medieval Byzantine periods as Leander's Tower (Tower of Leandros), sits on a small islet located at the southern entrance of Bosphorus strait 200m off the coast of Üsküdar in Istanbul, Turkey. Photo courtesy of Talat Uyare / Türkiye.