

Sohang C. Gandhi
ICPS Report
August 2005

Airline trouble caused me to miss much of this year's *International Conference of Physics Students* in Coimbra, Portugal. However, the portion of the conference that I did attend was well worth all of the frustrations at the airport. The student staff and organizers of the conference were extremely friendly and helpful and the attendees, enthusiastic and exuberant. The University of Coimbra which hosted the conference was located, optimally, atop a hill over-looking the beautiful city. Coimbra possessed many examples of breathtaking historical architecture, including ancient Roman ruins.



Monday night was the costume party. All of the attendees displayed great creativity and originality in their costumes. Tuesday was a trip to Lisbon and Sintra. Circumstances meant cutting the tour of Lisbon short and so I decided to break from the group and explore Lisbon on my own. Lisbon was a beautiful city—like a smaller version of Paris. There were many great shops and restaurants in the area surrounding Rossio Square. St. Jorge Castle could be seen at the skyline set at the high point of the city, atop the hills.

Both as a presenter and as an audience member, I greatly enjoyed the lecture and poster sessions at the conference. Topics varied greatly, from the physiology of hearing to quantum dots to topological field theories. All of the speakers orated skillful and my interest never waned. The friendly atmosphere gave way to enthusiastic discussion of the material presented. Any anxiety, which I felt as a presenter, was quickly dispelled by the enthusiasm displayed in the countenance of the audience members. The audience also expressed their interest by posing many thoughtful questions.

One of the presentations which I especially enjoyed was entitled *Ice Cream and Physics*. In this presentation, Joe Smo presented the true story of a student in Africa who noticed that his ice cream froze faster if he heated it before placing it in the freezer. He found that the same was true for water and many other items found in the kitchen. When he presented this to his teachers he was ridiculed and dismissed. However, he eventually found a university professor who was willing to conduct an experiment. To the

professor's surprise, the experiment confirmed the young students assertions. This is now a universally accepted phenomenon and this story illustrates how no one should be dismissed when it comes to science, regardless of his or her education and background.

During the intermission between lectures, participants enjoyed neat physics demonstrations being conducted by the European Physics Fun organization in the halls. Most sensational was an exhibit in which sound waves made their image in flame. In the picture below, a hollow metal pipe is filled by a supply of propane. On the right end is a rigid cap. On the left end is a rubber membrane which is in contact with a speaker. When monotone sound is produced at the speaker a standing wave is formed in the pipe. Nozzles at the top of the pipe allow propane to flow out to sustain the flames. About the nodal regions of the standing wave, pressure is lower and thus there is less flow of propane through the nozzles resulting in a smaller flame. The opposite applies about the anti-nodal regions. Thus a sinusoidal pattern is observed in the flame. When, music is played on the speaker, the flames dance in rhythm (see picture below).



The conference ended with an opportunity to thank the organizers at the closing ceremony. Both ICPS committee and all of the student volunteers from the University of Coimbra stood to receive a much-deserved roar of cheer and applause. It is due to the incredible and diligent work of these individuals that my colleagues and I were able to have such a professionally and culturally enriching experience. There followed a farewell party with a giant cake commemorating the twentieth year of ICPS.

