



# ETAPS daily

Number 2

Universidade do Minho, Braga

March 25, 2007

## How to get to the University Campus at Gualtar

Satellite events on March 24 and 25 will take place at the University Campus, in the area of the city known as Gualtar. If the weather is nice, you may want to walk. It should take you about 30 minutes from the city center. Walk in the direction of Bom Jesus, through Rua de S. Vitor, Rua de D. Pedro V, and Rua Nova de Sta. Cruz.

Alternatively you can use the shuttle that will run on Saturday and Sunday. Shuttles will leave from two locations in the city center, see timetable below and map.

At the campus (see map) you should have no trouble in finding the CP2 building, where events will be located. This is the first building you will see coming from the city center.

The registration desk will be located in the entrance hall of the CP2 building. The opening hours are 8:30 - 18:00. Lunch (included in the workshops daily fees) will be served at the university restaurant (see map).

## Shuttle Information

| Day     | Time  | From          | To                   |
|---------|-------|---------------|----------------------|
| Sun, 25 | 8:15  | Train Station | Univ. Campus         |
|         | 8:15  | H. Turismo    | Univ. Campus         |
|         | 8:15  | Bom Jesus     | Univ. Campus         |
|         | 18:45 | Univ. Campus  | City Center          |
|         | 18:45 | Univ. Campus  | Bom Jesus: WS Dinner |
|         | 23:00 | Bom Jesus     | City Center          |
| Mon, 26 | 8:15  | Bom Jesus     | Theatro Circo        |
|         | 22:00 | Theatro Circo | Bom Jesus            |

## Day Programme

### Workshops

- ACCAT – Applied and Computational Category Theory  
09:00-18:00, room: CP2-103
- COCV – Compiler Optimization meets Compiler Verification  
09:00-18:00, room: CP2-108
- HAV – Heap Analysis and Verification  
09:00-18:00, room: CP2-104
- HFL – Hardware design using Functional Languages  
09:00-18:00, room: CP2-110
- LDTA – Seventh Workshop on Language Descriptions, Tools and Applications  
09:00-18:00, room: CP2-111
- QAPL – Fifth Workshop on Quantitative Aspects of Programming Languages  
09:00-18:00, room: CP2-105
- SC – Workshop on Software Composition  
09:00-18:00, room: CP2-101
- WITS – WITS – 7th International Workshop on Issues in the Theory of Security  
09:00-18:00, room: CP2-102

### Social Programme

- Joint Workshops Pre-Conference Dinner at Bom Jesus (tickets required)  
18:45 Shuttle departure from University Campus, Gualtar

## U.Minho-Gualtar



## The Bom Jesus Funicular

The Bom Jesus funicular was the first built in the Iberian Peninsula (1880-1882). It was the initiative of Manuel Joaquim Gomes (1840-1894), a businessman from Braga who commissioned the project from Niklaus Riggenschach (1817-1899), the well-known Swiss engineer and locomotive builder. The project was directed locally by Raoul Mesnier du Ponsard (1848-1914), a Portuguese engineer of French origin.

This funicular, which had a great impact at its time, is the oldest in the world powered by water ballast and still in regular service: water is loaded into the car at the top of the hill, which weights it down as it slides to the bottom, at the same time drawing the lighter, drained car up the hill, where the process starts all over again. The drained water is used for irrigation.

The funicular track is 274 meters long and descends 116 meters, giving an average gradient of around 42%. Journey time is 2.4 to 4 minutes and its capacity is 38 passengers per car. Its timetable is from 8am to 8pm, every half hour.

## Challenge:

Build a model of the Bom Jesus funicular tracking system in your favorite formal notation, framework or tool and prove the following (liveness) property: “the Bom Jesus funicular will remain the most environment-friendly means of transportation in the world as long as water springs off the Bom Jesus hill top”.

## Suggested Cultural Activities for March 25

If you have free time in the afternoon, why not visit the Photography Museum? On Sundays, open from 14:30 to 18:00.

Museu da Imagem  
Campo das Hortas, 35-37  
Tel: 253 278 633

## Answer to the Quiz of Number 1

Pablo Picasso

## Weather

Mostly Sunny, 17°/8° C.