INTERNATIONAL SCHOOL OF MATHEMATICS
«GUIDO STAMPACCHIA»

50th Workshop
GRAPH THEORY, ALGORITHMS AND APPLICATIONS

ERICE-SICILY: 8 - 16 SEPTEMBER 2008

Sponsored by the: • Italian Ministry of University and Research • Sicilian Regional Government • Mathematics and Computer Science Department • University of Salerno • Computer Science, System and Production Department, University of Rome "Tor Vergata"

DIRECTORS OF THE WORKSHOP
F. GIANNESSI

PROGRAMME AND LECTURERS

Point-to-Point Shortest Paths with Preprocessing
Metaheuristics for the vehicle routing problem and its variants
Dynamic graph algorithms
Cycles in Graphs: Theory, Algorithms, Applications, and Implementation
Cliques, Quasi-Cliques and Clique Partitions in Graphs
Max-Cut and extensions: seeking for optimal solutions
The split delivery vehicle routing problem
Graph algorithms
Algorithms for the Asymmetric Travelling Salesman Problem

A. GOLDBERG, Microsoft Research, Silicon Valley, CA, US
B. GOLDEN, University of Maryland, Baltimore, MD, US
G. RINALDI, CNR, Rome, IT
G.F. ITALIANO, University "Tor Vergata", Rome, IT
K. MEHLHORN, Max-Planck Institut für Informatik, Saarbrücken, DE
M.G. SPERANZA, University of Brescia, IT
P. PARDALOS, University of Florida, Gainesville, FL, US
P. TOOTH, University of Bologna, IT
R.E. TARJAN, Princeton University and HP Labs, Princeton, NJ, US

PURPOSE OF THE WORKSHOP

The huge number of application problems that can be modelled by means of graph theory, and the resolution techniques used in this research area, require the interaction of different types of skills from various disciplines as, for example, mathematics, computer science, optimization, statistics, etc. In this context, however, there exist very few occasions and events promoting such an interaction. The aim of this proposal is to organize a school in order to bring together and present, in a systematic and organic way, several competences from different disciplines on problems concerning graph theory.

The aim of the school is twofold. On the one hand, it aims in pointing out how it is possible to define a common scientific framework able to better relate the contributions coming from several researchers addressing the same problems by means of different theories and methodologies; on the other hand, the school will be an important occasion to stimulate collaborations and to exchange ideas among researchers that hardly have the opportunity of sharing the same scientific event.

More in detail, the objectives of the school are:
• emphasizing the importance and the potentialities of graph theory in solving more and more complex problems arising in real world applications;
• explaining and presenting the classical methodologies, models and algorithms (belonging to different disciplines) that turned out to be the most important and efficient;
• showing and pointing out the newest and most relevant research areas that are more suitable to model and describe the actual problems in the field of graph theory.

APPLICATIONS

Persons wishing to attend the Workshop should apply by e-mail to the Co-Director of the Workshop:

Professor Raffaele CERULLI
D.I.M.I. – Università degli Studi di Salerno
Via Ponte don Melillo – 84084 FISCiano (SA), Italy
Tel +39.089.963326 – Fax +39.089.963300 – e-mail: raffaele@uniss.it

They should specify:

i) date and place of birth, together with current nationality;
ii) affiliation;
iii) address, e-mail address.

Closing Date for Applications: 15 June, 2008

PLEASE NOTE
Participants must arrive on September 8, not later than 7 pm.

More information about the «Ettore Majorana» Foundation and Centre for Scientific Culture can be found on the WWW at the following addresses:
http://www.cs.cern.infn.it

More information about the Course can be found on the WWW at the following address:
http://www.graphalgorithms.it

POETIC TOUCH

According to legend, Erice, son of Venus and Neptune, founded a small town on top of a mountain (750 metres above sea level) more than three thousand years ago. The founder of modern history — i.e. the recording of events in a methodic and chronological sequence as they really happened without reference to mythical causes — the great Thucydides (~500 B.C.), writing about events connected with the conquest of Troy (~1183 B.C.) said: «After the fall of Troy some Trojans on their escape from the Achaei arrived in Sicily by boat and as they settled near the border with the Sicilians all together they were named Elyma: their towns were Segesta and Erice.» This inspired Virgil to describe the arrival of the Trojan royal family in Erice and the burial of Anchise, by his son Enea, on the coast below Erice. Homer (~1000 B.C.), Theocritus (~300 B.C.), Polybius (~200 B.C.), Virgil (~50 B.C.), Horace (~20 B.C.), and others have celebrated this magnificent spot in Sicily in their poems. During seven centuries (XIII-XIX) the town of Erice was under the leadership of a local oligarchy, whose wisdom assured a long period of cultural development and economic prosperity which in turn gave rise to the many churches, monasteries and private palaces which you see today.

In Erice you can admire the Castle of Venus, the Cyclopean Walls (~800 B.C.) and the Gothic Cathedral (~1300 A.D.). Erice is at present a mixture of ancient and medieval architecture. Other masterpieces of ancient civilization are to be found in the neighbourhood: at Motya (Phoenician), Segesta (Elyman), and Selinunte (Greek). On the Aegeadian Islands — theatre of the decisive naval battle of the first Punic War (216-241 B.C.) — suggestive neolithic and paleolithic vestiges are still visible: the grottoes of Favignana, the carvings and mounds of Levanzo.

Splendid beaches are to be found at San Vito Lo Capo, Scopello, and Cornino, and a wild and rocky coast around Monte Cofano: all at less than one hour’s drive from Erice.

DIRECTORS OF THE WORKSHOP

F. GIANNESSI
DIRECTOR OF THE SCHOOL

A. ZICHICHI
EMFSC PRESIDENT AND DIRECTOR OF THE CENTRE