

## APPLICATIONS OF INTERVAL COMPUTATIONS:

### *International Workshop*

This workshop will be organized in El Paso, Texas, the week of February 19–25, 1995, as part of the 1995 International Quality Forum. It is partly sponsored by the Institute for Manufacturing and Materials Management.

*High-quality papers on all areas of applications of interval computations are sought, especially applications to manufacturing and (broadly understood) quality control.*

Many new algorithms have been developed, but few have been applied to real-life manufacturing problems. The main reason for that is the lack of communication:

- Engineers who are involved in real manufacturing rarely have a knowledge of interval computations. So, when they encounter the accuracy problems that can be in principle solved by interval methods, then, instead of using the existing techniques, they try to invent techniques of their own.
- People who are experts in interval computations are not aware of the potential application problems. Therefore, although they would love to apply their methods for solving real-life problems, instead, they apply them to simulated “toy” problems.

**Bringing manufacturers and manufacturing engineers together with specialists in interval computations will benefit both groups.** This “get-together” is what the proposed workshop is about.

- People from manufacturing will bring their problems, and their ideas of what needs to be done.
- People from Interval Computations will bring their expertise.

Contacts will not be limited to the workshop: since this workshop is intended to be a part of the general Quality Forum, participants attending this workshop will mingle with participants from other tracks and workshops, and hopefully, fruitful collaboration will emerge.

#### **Format of the workshop:**

- First, a brief intro to the field. Depending on the interest, it may be a serious *tutorial*, or simply a *plenary talk*. Suggestions are welcome.
- *Presentations* of two types:

- Method-oriented: *Presentations of methods of interval computations and their applications (actual or potential).*
- Problem-oriented: *Presentations that formulate potential problems for interval computations to solve.*
- *Product demonstrations.* There are several commercially available software packages in the market, and several university-made packages that are quite good. Product demonstrations help both sides:
  - *Producers* of these products will sure be interested in additional marketing.
  - People from *manufacturing engineering* will be more willing to use methods of interval computations if they are presented not as a new methodology to learn, but also, as a ready-to-use instrument.
- Finally, a *panel* that will try to generate ideas and methods for further collaboration.

### Organizing committee

- *Andrew Bernat* (El Paso, UTEP)
- *Baker Kearfott* (Lafayette, LA)
- *Vladik Kreinovich* (El Paso, UTEP)
- *Thomas J. McLean* (El Paso, UTEP)

Professor Thomas McLean, Chair of UTEP Department of Mechanical and Industrial Engineering. He himself has applied interval computation techniques to manufacturing problems, and he has supervised several related projects.

- *Gennady Solopchenko* (St. Petersburg, Russia).

Dr. Solopchenko is a Vice-President of the Russian Academy of Metrological Sciences, member of several International committees and working groups in metrology. He combines industrial experience with the knowledge of interval computations.

**Deadline.** Abstracts (up to 4 pages) are due September 1, 1994. Please send them to Vladik Kreinovich either by email to:

vladik@cs.ep.utexas.edu

or by regular mail to:

Department of Computer Science  
 University of Texas at El Paso  
 El Paso, TX 79968, USA  
 fax (915) 747-5030

Ideally, abstracts should be in a version of T<sub>E</sub>X ( $\mathcal{A}\mathcal{M}\mathcal{S}$ -T<sub>E</sub>X, T<sub>E</sub>X, or L<sub>A</sub>T<sub>E</sub>X), but ASCII, WP, and other formats are acceptable. If you have

questions, Kreinovich's office phone is (915) 747-6951 (you can leave a message).

We have decided on an early deadline, because we are planning to subject abstracts to peer review, and to published the refereed Proceedings before the workshop. Late submissions are welcome, but with no guarantee to appear in the Proceedings.

Best papers will be considered for publication in the International Journal *Interval Computations*.

**Exact time, registration fee, hotel reservations, etc.**, will be determined later by the Organizing Committee of the Intl. Quality Forum.

**Entertainment.** El Paso, "Sun City", is one of the oldest cities in the USA. Its history has started about 400 years ago. Local history buffs claim that El Paso has been the place of the first ("real") Thanksgiving in American history. Its 515,000 citizens enjoy more than 300 sunny days a year. The average temperature in February is 55 F ( $\approx 12^\circ\text{C}$ ).

Among the main attractions are:

- The Southernmost point of the Rocky Mountains. A view from that point is magnificent; it is a favorite meeting place for young people in love.
- The Missions founded by the local Indians more than 300 years ago. Ysleta Mission is the oldest building in Texas.
- The oldest road in the United States, the Camino Real (Spanish for "Royal highway") ran through El Paso. Its way is marked near the border (close to La Hacienda restaurant), and in the Central Plaza.
- The Tigua Indian Reservation, the only Indian reservation in the country located in the urban area. It has a restaurant and a casino for those who love to gamble.
- A walk through Downtown El Paso allows you to see several Wild West mementos:
  - places of the famous gunfights; El Paso was once named "Six-Shooter Capital" of America (not any more);
  - a fountain with three levels: for horses, men, and dogs;and a modern theatre built in the shape of a sombrero (traditional Mexican hat).
- The University of Texas at El Paso (UTEP) with 17,000 students, and buildings designed in the Buthanese architectural style (Buthan is a small kingdom between India and China). UTEP's architecture was recently featured in National Geographic.
- El Paso is a home for Fort Bliss, the largest air-defense center in the Western World. Troops from all allied nations train there.

- El Paso is right on the border with Mexico. Across the river is a twin city Juarez (pronounced “Hoo-AH-res”) with a population of about 2 millions. It also has lots of restaurants and other places of entertainment. No visa is required for US and Canadian citizens to enter Juarez. Citizens of other countries must check with American and Mexican consulates on how to get into Juarez (usually, no problem), and how to get back to El Paso (it can sometimes be more difficult).
- El Paso has more than a 1000 reasonably priced restaurants. Many of them serve authentic Mexican food (both mild and spicy hot). As any big city, it also has variety of eating places, that serve American, Chinese, German, Greek, Indian, Italian, Japanese (to name just a few), and as of recently, even Russian food. For those who enjoy a drink: El Paso claims to be the place where the famous “margarita” cocktail has been first served.
- For gamblers: live horse races in Sunland Park Race Track, located just 10 minutes from Downtown El Paso. Greyhound racing is a yearlong activity in Juarez.

#### **Main possible one-day trips from El Paso:**

- Hueco Tanks State Historical Park, located 25 miles East of El Paso, a unique rock formation. It has been used by Indians through the centuries, and contains more than 2,000 pictographs in the caves. There are also real rocks for real Men and Women to climb.
- Old Mesilla, 40 miles NW from El Paso, a quiet old village of great charm. It has an old church and many historic buildings (including the building where Billy the Kid, the famous outlaw, was tried). Many shops and restaurants, including the one frequented by a ghost (for sceptics, a ghost’s photo is posted).
- Carlsbad Caverns, 145 miles East from El Paso, one of the world’s largest caverns with 20 miles of underground corridors and huge chambers.

#### **How to get to El Paso.**

- **By plane:** El Paso has an International Airport, with majority of main airlines flying.
- **By train:** An Amtrak train goes from Los Angeles to Florida and back via El Paso. It is more expensive than the plane, and it takes longer, but the views are gorgeous. Warning: tickets must be reserved well in advance.
- **By car:** El Paso is located on Interstate 10 that goes from Florida to Los Angeles.

**See you in El Paso!**