65th Birth anniversary of
Sergio Idelsohn

MECOM 2012 will be inaugurated on November 13th, this time in the beautiful northern Argentine city of Salta. Salta, a city famous for its empanadas (pasties), wines and folklore, among so many other things, lies at a point where the mountains meet with the forest, leaving a dream valley behind. There, researchers from many parts of the world will gather to share good moments and exchange scientific opinions. On this occasion, we are fortunate to honor one of the distinguished citizens that Argentina has given to the world on his 65th birth anniversary, our dear friend, colleague and professor, Sergio Rodolfo Idelsohn Barg. It is difficult to describe in a few words the contribution that Sergio has made over his academic life, which includes almost two thirds of his lifetime. However, we have accepted the challenge.

Figure 1:
Sergio Idelsohn

Sergio Idelsohn is an Argentine scientist specialized in the field of computational mechanics. He started his career in solid mechanics when, as a PhD student at the University of Liege, he came in contact with plates and shells. Later, back in Argentina, he focused on applications of the finite elements method in heat transfer and fluid mechanics, areas in which he has been working up to the present. However, throughout his active scientific career, he deeply explored different methods and made valuable contributions to each of them, such as finite volume, finite elements and, lately, particle methods. In his opinion, the latter methods are the ones that best adapt to problem solving in fluid mechanics, where fluids interact with a free surface, when the mixture of diverse fluids is simulated or when they interact with some structures.

Dr. Sergio Idelsohn was born in the city of Paraná on November 15, 1947. He got his degree of Mechanical Engineer at the National University of Rosario (UNR) in 1970 and his Ph D in Engineering at the University of Liege, Belgium, in 1974.

Figure 2:
Sergio with
Olek Zienkiewicz

Figure 3:
Sergio Idelsohn in front of his Real Time project

He has held several positions, such as Tenured Professor at the UNR since 1989, CONICET Scientific Researcher since 1981, reaching the maximum researcher category (Senior Researcher) at a very early age. He was Director of the Regional Center of Research and Development (CERIDE), Santa Fe (1985-1987 and 2003-2006). He was Guest Professor at the Institute for Advanced Study at Princeton (USA); at the University "Pierre et Marie Curie" (France), and at the Polytechnic University of Catalonia (Barcelona, Spain). From 1985 to 2005, he was president of the Argentine Association of Computational Mechanics, an organization that had its origin in the visionary ideas of several Argentine scientists of that time, with Sergio Idelsohn among them. Since 1980, when the city of Santa Fe adopted him as a citizen, he worked hard to create, establish and strengthen the current International Center for Computational Methods in Engineering. Another of Sergio's values is his ability to make friends, which helped him gain the affection of many of the authors of the most prestigious books published in the field of Computational Mechanics, professor Olgierd Zienkiewicz among them.

At present he is a researcher at the Institució Catalana de Recerca i Estudis Avançats (ICREA), developing his activities at the International Center for Numerical Methods in Engineering, (Centro Internacional de Métodos Numéricos en Ingeniería, CIMNE), Barcelona, Spain. Every year, Sergio and his wife, Lelia Zielonka, are welcome in Argentina, and particularly Santa Fe, where they stay for about two months. Lelia was the secretary at CIMEC during all the years that they lived in Santa Fe most of the time. During those two months, Dr Idelsohn works as Professor at the Faculty of Engineering and Hydrological Sciences of the National University of the Littoral in Santa Fe. He has published more than one hundred scientific articles in international journals and is the author of several book chapters, such as

Chapter 9 in Implicit Finite Element Methods (1984). In 1987 he received one of the most important awards in his scientific life, the Houssay award, a prize granted to the author of the best scientific works conducted in Argentina. He was elected "Fellow" of the American Academy of Mechanics in 1996 and of the International Association of Computational Mechanics in 1998. In 1993 he received the Konex Award in the field of Industrial, Chemical and Electromechanical Engineering.

He also received the Award of the National Academy of Sciences of Argentina in 1997 and of the International Association of Computational Mechanics in 2002. In 2006 he was granted the AMCA Award of the Argentine Association of Computational Mechanics for his sustained research, teaching, and professional activities. In 2007 he received the Elsevier Scopus Award for the number of times his works were cited in the previous ten years. In 2009 he was given the Sociedad Española de Métodos Numéricos en Ingeniería (SEMNI) Award, in recognition to a professional and international trajectory in the Hispanic speaking world. In February 2010 the European Research Council gave him a grant worth millions to develop numerical simulation systems to perform real-time calculations.

As Professor Idelsohn states, the challenge lies in a change of paradigm in the way of thinking about the problems. "Although computers are very fast at present, calculations in engineering take between 10 and 20 hours. If we need to calculate, for example, the consequences of a crack in a dam, these periods are unacceptable. Therefore, the project that received ERC funding consists of doing the calculations in real time. We will not need to wait for so many hours for the work of a computer while water flows out", explained the researcher during an interview in Santa Fe. Then he asserted that: "With this method we might do the calculations at the same time that the dam failure occurs. Thus, determining how water will descend, where it will reach, whether the nearby cities will have to be preventively evacuated, is very useful to prevent the contingency. The advantage of real time calculation lies in those cases in which natural phenomena occur very rapidly, and rapid decisions need to be made as well. Our work proposes a method for doing those calculations in real time.

To conclude, happy birthday dear Sergio, and many thanks for all that you have given to us. ●

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