

Enrique Zuazua's speech at the reception of the certificate of Ambassador of the Friedrich-Alexander University (FAU) from Professor and Vice-President Günter Leugering

DIES Academicus, Erlangen, November 4, 2015

Mathematics: Enlightening darkness

Mr President of the Friedrich-Alexander University (Professor Hornegger), dear colleagues, students, friends and distinguished guests, ladies and gentlemen:

Protagoras of Abdera, one of the Older Sophists, twenty five centuries ago claimed, "man is the measure of all things".

And humans, we all, women and men, experience the need of understanding the surrounding world, the universe, nature, social relations...

In this effort, as Richard Feynman, the celebrated Nobel Prize Winner in Physics (1965), said, "Our imagination is stretched to the utmost, not, as in fiction, to imagine things which are not really there, but just to comprehend those things which are there".

In this search of comprehension we need of the finest intellectual instruments, of knowledge that require Academic Institutions, Universities, to grow. They flourish when individual efforts are well structured and coordinated, through cooperation. The Friedrich-Alexander University in Erlangen-Nürnberg is a model to follow at this respect.

Last academic year I had the privilege of visiting this institution in the frame of the Humboldt Research Awards program to conduct my work within Professor and Vice-President Günter Leugering's Chair.

I know Günter for many years. From him and other colleagues and masters I learned that excellence in academia needs of a subtle mix of high scientific standards and human values.

Today it is for me a great honour to become an Ambassador of this University. I will proudly contribute to enhance the international projection of the University and its academic endeavours.

And I will do it from the perspective of Mathematics. But Mathematics are not alone.

The great Sofia Kovaleskaya, celebrated for her contribution to the theory of Partial Differential Equations, said, "the poet must see what others do not see, more deeply than other people. And the mathematician must do the same."

But some questions are so deep that go beyond our present understanding.

The Basque writer and poet Bernando Atxaga in his poem "37 questions to my only contact beyond frontiers" inquiries: "Beyond frontiers, do abyssal fishes have a perception of sun?"

I guess they do not. Perceiving the sun, most likely, needs living closer to surface than they do. But, I think, abyssal fishes might have an intuition about light, as opposed to darkness.

Mathematics is one of our main tools to illuminate darkness. And despite the millenary tradition of the discipline, we are still in the very beginning.

Its future will be built in institutions like the Friedrich-Alexander University where this endeavour of “seeing deeper” is pursued in a twofold manner. First, addressing the inner fundamental problems of the discipline. And, second, tackling applications to Industry, Society and other Sciences: material sciences, gas transportation networks, and other areas that constitute key ingredients of modern civilisation such as economics, geophysical and oceanic flows, etc.

I will proudly and humbly represent the Friedrich-Alexander University in my role of Ambassador.

I feel honoured and indebted.

Thank you for this generous nomination and for your attention.