



Pacific Institute *for the*
Mathematical Sciences

Mathematics and the Planet Earth: a Long Life Together (I & II)

June 15 & 17, 2013
University of British Columbia
3:00 pm Earth Sciences Building Rm 2012

SPEAKER: Ivar Ekeland (Université Paris-Dauphine)

When Columbus left Spain in 1492, sailing West, he knew that the Earth was round and was expecting to land in Japan. Seventeen centuries earlier, around 200 BC, Eratosthenes had shown that its circumference was 40,000 km, just by a smart use of mathematics, without leaving his home town of Alexandria. Since then, we have learned much more about Earth: it is a planet, it has an inner structure, it carries life, and at every step mathematics have been a crucial tool of discovery and understanding. Nowadays, concerns about the human footprint and climate change force us to bring all this knowledge to bear on the global problems facing us. This is the last challenge for mathematics: can we control change?

This two-part lecture investigates how our idea of the world has influenced the development of mathematics. In the first lecture on July 15, I will describe the situation up to the twentieth century, in the second one on July 17 I will follow up to the present time and the global challenges humanity and the planet are facing today.

IVAR EKELAND was director of PIMS for the period 2003-2008. He is a former President of Université Paris-Dauphine, and held the Canada Research Chair in Mathematical Economics at the University of British Columbia until his retirement in 2011. He is the founding editor of the "Annales de l'Institut Henri Poincaré-Analyse non linéaire" and is currently Editor in Chief of "Mathematics and Financial Economics." He has also written numerous books and papers in mathematics, economics and finance, and is also a regular contributor to the journal "Nature" as well as to the magazine "Pour la Science." He is a Fellow of the Royal Society of Canada.

Ekeland's contributions to Mathematics include fundamental results in Convex and Non-linear Analysis, Control Theory, Hamiltonian Mechanics, Symplectic Geometry, Mathematical Economics and Finance.



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