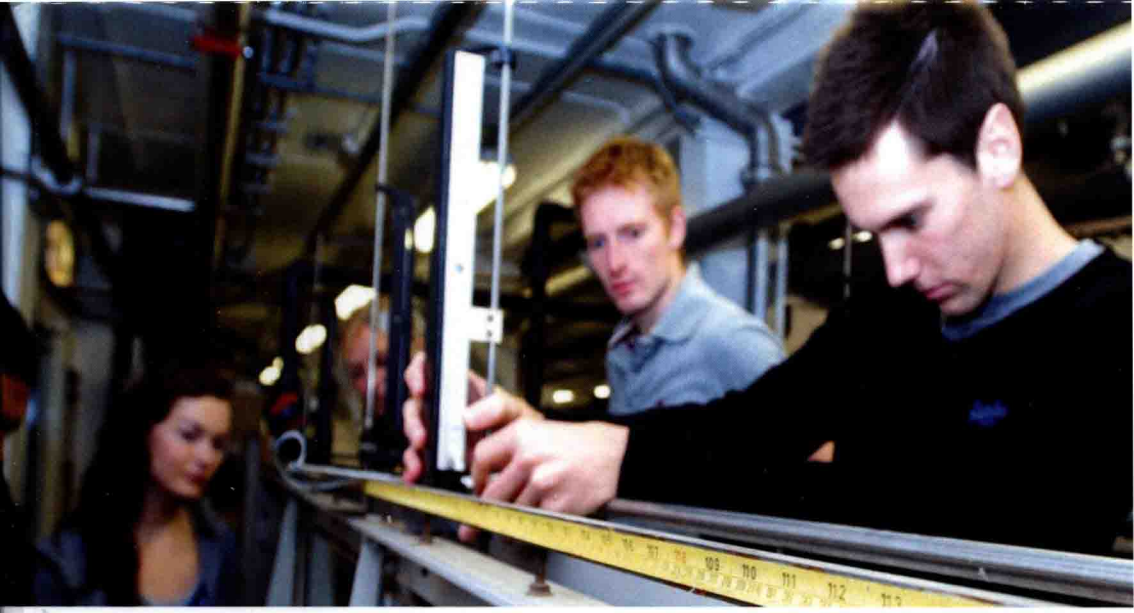

Measurement in Science and Civil Engineering

Nelson Bolívar, Ph.D

ArclerPress

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In order to develop, research, model, or construct it is require to perform measurements on those systems we are interested. The type of measurement will be given by the nature of the object, or the subject under investigation. In science the measurements often pursue to understand very complicated phenomena, inaccessible sometimes to the currents measurement devices or that may need some innovation in the protocols used. Of course it is in science and engineering where most of the innovations manifest primary and then are exported to other fields, for instance the measure devise in high energy experiments carry a lot of new techniques and protocols to improve the characterization of a variety of systems. In a laboratory the conditions to perform a measurement can be controlled to a certain degree, but facing measurement in outside scenarios involves more complex situations. Typically, any construction needs the proper elaboration of it constituents, saying concrete, steel of any other product of pre-manufacturing origin, that requires in every step of its fabrication a control and monitoring, even beyond the factories, the in-situ measure of certain terrains characteristics, tension on rail roads, porosity in the ground and in the structures, all of these depends of meticulous and appropriate measurements using a variety of techniques, very often originated in pure sciences. Students, civil engineers, and materials scientists will find this book to be a good comprehensive resource for learning about the fundamental methods used in those fields to achieve trustworthy measures, focusing on specific examples that are also top research in the area, suitable for the interested reader.

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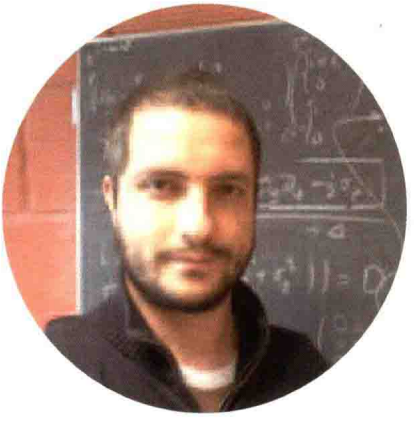

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Preface

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