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## Preface

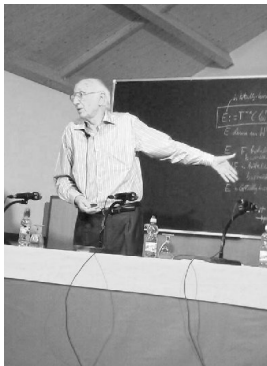
### Open problems in infinite dimensional geometry and topology

#### Prefacio

#### Problemas abiertos en geometría y topología infinito dimensional

Geometry and infinite dimensional topology is a very active area of research where the interaction of measure theory, functional analysis and descriptive set theory is omnipresent.

The aim of this special issue is to collect a number of research and survey papers that somehow show the state-of-the art in infinite dimensional geometry and topology as well as a good collection of open problems in the area. We expect, on one hand that this special issue might serve as a good reference for senior researchers, and on the other we hope that these noteworthy papers and open problems might attract the attention of young researchers to the area. Hence, we expect this Special Issue to be a very useful source of information as well as inspiration for young and senior researchers already working in this direction.



Manuel Valdivia

This Special Issue is dedicated to Professor Manuel Valdivia who became eighty years old in 2008. Valdivia graduated first as an *Agronomist Engineer* (1958), then he defended his Ph. D. as such in Madrid (1961); during the same year he completed his studies as a Mathematician and in 1963 he defended his Ph. D. under the supervision of Ricardo San Juan. In 1965 he became a *Full Professor* at *La Universidad de Valencia*, where he remained teaching and leading a strong research group until he retired in 2005. He continues there his research work as Honoray Professor. Valdivia has been an *Académico de Número de la Real Academia de Ciencias Exactas, Físicas y Naturales de Madrid* since 1975. He is also a fellow member of several international Research Institutes and Societies. He has received a good number of prizes and he has been appointed *Doctor Honoris Causa* by the universities Politécnica de Valencia, Jaume I de Castellón, Liège and Alicante. According to MathSciNet, Valdivia

has published 184 papers and has 330 references. Scientifically speaking we would like to highlight first his research monograph “Topics in locally convex spaces”, North-Holland Mathematics Studies 67, of 1985, that became a standard text for researchers and had a strong influence in the area; second, and in a different line of research, we stress that the class of compact spaces now called Valdivia compacta are among the distinguished ones for the classification of non separable Banach spaces. Valdivia has been the supervisor for 32 Ph. D. thesis: many of his students are today Full and Associate Professors at different Spanish Universities. Beyond the numbers and prizes, the legacy of Valdivia goes to the heart of the true meaning of being a mathematician. As his students we learnt many different things from him. Attending his lectures we understood that there is a place for mathematics by themselves, mathematics without pressure, deep mathematics with clever and simple ideas done by someone who has mastered them. By his actions Valdivia set an example that to some extent commanded us to live as his mathematician-sons by the following simple rules:

1. Do beautiful mathematics, and communicate them the best that you can;
2. say things when they are worthy;
3. offer to your students a framework to work in, better than a concrete problem to solve;
4. teach and do research, do not make excuses and neglect teaching if you do research or the other way around;
5. be serious, be a professional.

Finally we want to thank all the authors who contributed to this Special Issue for their enthusiasm, for sharing with us their best mathematics and for fulfilling all the strict deadlines we have had to impose on them in order to make this publication a reality. As the number of pages in each RACSAM issue is limited, it has not been possible to include here the two following accepted papers:

- Marco A. López and Michel Volle, *On the subdifferential of the supremum of an arbitrary family of extended real-valued functions*
- Jerzy Kakol and Manuel López-Pellicer, *On realcompact topological vector spaces*

We announce that they will appear in the next issue, RACSAM 105(1), and we are very grateful to these four authors by accepting this delay. Last but not least we extend our gratitude to the RACSAM and particularly to the Editor in Chief, Manuel López Pellicer who supported this Special Issue from the very beginning. From the technical point of view we thank José Mas who has been in charge of the compilation of the issue.

**Murcia, September 3th, 2010.**  
**Bernardo Cascales and José Orihuela.**