



Data storm in the spanish pavilion in the Expo 2020

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ABSTRACT

The form of the pavilion is the result of the intention to offer shadow to a plaza under extreme sun and to reduce the air temperature in this space trough the flow of air (chimney effect). We wanted to produce a better place and at the same time a strong image with symbolic power that can represent a country. The dimensions that the urban rules allow for the pavilion where follow to the end so, what we had, was an enormous textile tent of 16m height that had to support sandstorms and some heavy rains.

All of this is not too difficult for regular structural calculus programmes, the problem was that the structure is not a regular one, so the mathematical models usually reproduce reality in a simple way, and they work when reality is regular or when it is inside certain limits. When the projects explore the limits of the rules then we need to go back to reality and measure it directly, in this case with a model and a wind tunnel experiment. Then the problem is how can we translate enormous quantities of data in an efficient way. It is a problem of economy of time and economy of resources. There is also the question of the language or form used to make the translation and what form can we use to make the data visual and useful for the calculus of the structure?

These problems were confronted in the calculus of the textile structure of the Spanish pavilion in the EXPO 2020.

