

Form finding and analysis of the influence of boundary conditions on cable structures.

The new San Mames Stadium and the new Ciudad de Valencia Stadium designed by IDOM are the new homes of football teams Athletic Club of Bilbao and Levante U.D respectively. Derived from the experience gained with these two projects, and based on the wheel-spoke principle, this paper aims to analyse the influence of the boundary conditions on such structures.

The wheel-spoke principle works at full extent when its shape is completely circular. This paper describes the assessment process carried out by IDOM for different boundary conditions of the structure – shape, non-tensioned position, supporting conditions -. The performance of each potential alternative is evaluated and compared under different load conditions.