Parametric and associative modeling development as new approach for structural design in addition to finite element analysis

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ABSTRACT

Parametric and associative modeling starts from independent parameters to describe a network of dependencies. Some attributes are described by independent values and some others by values that vary in relation to the attributes they are related to. The dependent attributes receive data from the attributes they are related to. The parametric design technique allows for the exploration and testing van different design alternatives by applying different parameter values.
This paper presents the latest developments regarding the incorporation of the principles and concepts of parametric and associative modeling as a new approach for structural design in addition to finite elements analysis. The objective is to create tools that support the engineer in the conceptual structural design stage. The tool is based on a parametric and associative modeling approach and incorporates the well known parametric methods of structural mechanics, such as the finite element method. Examples of students work will be shown along side some theoretical basis.
The students successfully took up the challenge of developing a conceptual idea, selecting and developing an analysis and realizing and demonstrating the structural design tool.