
Design of a table using Load Path Network

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Abstract

Load path network (LPN) is a new equilibrium-based method for the design of three-dimensional structures. The goal of this method is to facilitate the design of complex three-dimensional structures by intuitively modelling three-dimensional flows of compression-tension internal forces. For creating these flows of forces, the method constructs a special network by connecting in a particular manner a given set of points in three-dimensional space. These nodes of the structure can be easily moved in space to explore further designs.

The new course “Structural Design VII” at DARCH in ETH Zurich, given for the first time in autumn semester 2018, offers the students an introduction to research. As part of this course, the students were proposed to explore the design potential of Load path network in the design of a table. This paper presents this first experience.

Keywords: Graphic Statics, Equilibrium-based models, Early design phase.



Figure: Visualization of the final design of a table modelled using Load path network.