

## عنوان مقاله:

Reliability-based Design Optimization of I-shape Simple Steel Beam

## محل انتشار:

سومین کنگره بین المللی علوم و مهندسی (سال: 1398)

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## خلاصه مقاله:

Confronted by the unknown and the events that may happen in the future, Civil engineers has been forced to maintain safety margins. Due to uncertainties the structure of designs and events, reliability is commonly perceived as an important issue. In this study, a simple steel beam is modelled under pushover load and it is expected that more information can be gained about its safety against push force load. In this research, a new risk index that its performance is different from that of reliability index has been introduced. It means that the higher risk index equals to weaker beam performance. There are various methods to obtain reliability that Cornel reliability index was used for this model. The best I-shape steel section should be optimized in geometric dimensions. It is appropriate to use algorithms to find the answer of proposed question, because there are various sections with equal areas and different dimensions and it is hard to use classical method. The purpose of Reliability-Based Optimization (RBO) is to find a balanced design that is the best I-shape steel section. The optimum section is one presenting better flexural .behaviour than the others, so lower risk index will be obtained

## کلمات کلیدی:

Reliability, Optimization, Pushover analysis, OpenSees, Genetic algorithm, Risk index

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1042963>

