

## The Faithful Extension of Constant Height and Constant Width Between Finite Posets

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**Abstract :** The problem of faithful extension with the condition of keeping constant height  $h$  and constant width  $w$ , i.e. for  $h w$ -inextensibility, seems more interesting than the brute extension of finite poset (partially ordered set). We shall investigate some theorems of  $hw$ -inextensive and  $hw$ -extensive posets that can be used to formulate the faithful extension problem. A theorem in its general form of  $hw$ -inextensive posets is given to implement the presented theorems.

**Keywords :** faithful extension, poset, extension, inextension, height, width,  $hw$ -extensive,  $hw$ -inextensive

**Conference Title :** ICMMS 2015 : International Conference on Mathematics and Mathematical Sciences

**Conference Location :** Zurich, Switzerland

**Conference Dates :** January 13-14, 2015