[1]高大峰,何新成,任禹州.冬季混凝土桥梁施工监控中温度参数的识别[J].自然灾害学报,2012,03:211-216.

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冬季混凝土桥梁施工监控中温度参数的识别(PDF)

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Title: Recognition of temperature parameters in monitoring of concrete bridge construction in winter

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关键词: 温度参数识别; 混凝土桥梁; 温度场; 太阳辐射

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摘要: 混凝土桥梁温度场设计参数是影响桥梁施工误差的主要因素之一,施工过程中对其进行有效的识别直接关系到混凝土桥梁的结构安全。目前我国尚缺少各季节、各地区的混凝土桥梁温度场监测资料。为了分析冬季施工过程中混凝土桥梁的温度场分布,对榆林地区某斜拉桥进行了箱梁室内外温度和温度效应监测,根据热传导理论,建立了数值模型,采用瞬态热分析方法,得出了该地区冬季理论温度场。通过与箱梁相应温度测量值的比较,基于MATLAB平台,对82组数据进行了指数拟合,得出了适用于榆林地区冬季混凝土桥梁的温度场分布图。

Abstract: Design parameters of the temperature field are one of the main factors that influence bridge construction errors. Effective recognition of these parameters in the construction process is directly related to the structural safety of concrete bridges. So far the monitored temperature field data of concrete bridge for different regions and different seasons are deficient in China. In order to analyze the temperature distribution in concrete bridge construction in winter, the indoor and outdoor temperature fields and temperature effects of some stayed-cable bridge in Yulin region were monitored. Based on the theory of heat conduction and transient thermal analysis, numerical model was established and theoretical temperature field of the region in winter was obtained. Finally, through comparison of the measurements and MATLAB platform, the index fitting

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of the 82 sets of data was obtained and the temperature distribution diagrams of concrete bridges in Yulin Region in winter were presented.

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