

## 著作类成果

# 大体积混凝土温度应力与温度控制

### 【创新性】

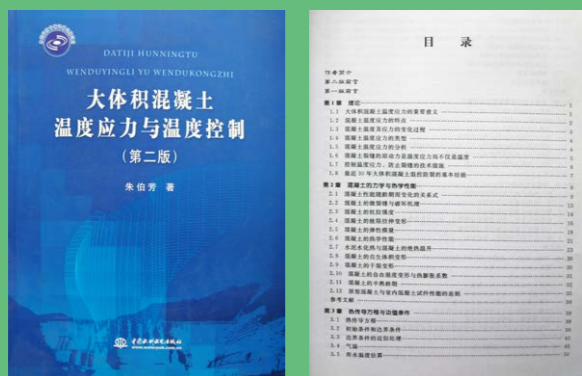
全面系统阐述了大体积混凝土结构温度应力和温度控制的基本理论、工程理念和技术措施，具体内容为：混凝土结构温度场和温度徐变应力的计算方法；各种大体积混凝土结构，如浇筑块、重力坝、支墩坝、拱坝、嵌固板、自由墙、基础梁、混凝土杆件、隧洞、孔口等结构的温度场和温度徐变应力的变化规律和计算方法；控制温度、防止裂缝的工程理念、技术措施和实践经验，包括各种温差的控制、混凝土原材料的优选、混凝土预冷、水管冷却、表面保温的计算方法和技术措施，国内外实际工程控制温度防止裂缝的实践经验。

### 【影响力】

我国最早的大体积混凝土温度应力计算与温控措施研究方面的专著，开辟了混凝土徐变理论和混凝土温度应力等研究领域，构建了完备的理论体系；日本建设省坝工中心于1991年将本著作早期版本译成日文；本书英文版已由清华大学出版社和英国 Butterworth-Heinemann 出版社联合出版；中国科学技术信息研究所编著的《中国高被引指数分析》（2011版）中，本书列为国内建筑科学领域高被引图书第4名。

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# THERMAL STRESS AND TEMPERATURE CONTROL OF MASS CONCRETE

### 【Innovation】

A comprehensive, systematic introduction is given to the basic theory, engineering concept and technical measures of the thermal stress and temperature control of mass concrete structures. The content includes: computing methods for temperature field and thermal creep stress of concrete structures; change law and computing methods of mass concrete structures, such as blocks, gravity dams, buttress dams, arch dams, fixed slabs, free walls, foundation beams, concrete rods, tunnels and orifices; and engineering concepts, technical measures and practical experience in temperature control and crack prevention, including computing methods and technical measures of control of temperature differences, selection of raw materials, pre-cooling of concrete, pre-cooling of water pipe and surface insulation, and practical experience of temperature and crack prevention in actual projects at home and abroad.

### 【Influence】

It is China's first book in the research of thermal stress calculation and temperature control measures in mass concrete, ushers in studies on concrete creep theory and concrete thermal stress, and establishes a complete theoretical system. In 1991, the Center of Dam Engineering of the Ministry of Construction, Japan translated this book into Japanese; and its English version was published jointly by Tsinghua University Press and the U.K.-based Butterworth-Heinemann. In the Analysis Report of Chinese Highly Cited Paper 2011 of the Institute of Scientific and Technical Information of China (ISTIC), this book ranks 4th in highly cited books of building science in China.

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