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THE MECHANICS OF COMPOSITE STRUCTURES

Wang Zhen-ming

(Institute of Mechanics, Academia Sinica)

Abstract

In this paper, we discuss the mechanical characteristics and advantages of composite structures. The various mechanical problems of composite structures and the analytical and numerical methods of solution are reviewed. The advances in our country and abroad and a brief description of the investigation in the Institute of Mechanics on mechanics of composite materials and composite structures are referred. This paper is written for the celebration of the establishment of the Institute of Mechanics, Academia Sinica for 30 years.

Keywords *mechanics of composite materials; mechanics of composite structures; anisotropic; geometric nonlinearity; physical nonlinearity*

土壤-植物-大气系统中水分分布的数学模型

提要 研究了土壤-大气系统和土壤-植物-大气系统中水分传递的数学模型．表述了建立模型的原则．所提出的模型反映了所研究系统中水分传递过程的基本物理现象，并且其中只包含最少的参数．计算得到的含水量所描述的含水量变化规律，其精度不劣于实验的误差．这个模型有助于确定直接用实验难以确定的一些数值，有助于研究实验不易得到的一些特征量，有助于计算栖根层中水分亏缺时制订最优灌水制度．