

反铲液压挖掘机挖掘图谱程序化绘制与实验 Research on Drawing Mine Map of Backhoe Hydraulic Excavator

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关键词: 反铲液压挖掘机 挖掘图谱 运动分析 动力学性能 挖掘力数学模型

摘要: 在对反铲液压挖掘机工作装置的运动学、动力学性能以及挖掘力数学模型全面分析的基础上,建立了反铲液压挖掘机整机的位置模型和挖掘力发挥模型。讨论了挖掘作业过程中各种限制因素对整机挖掘力的影响。编写了基于VB 6.0的计算程序,实现了作业区域内任意位置挖掘力的计算及以限制因素分区的挖掘图谱的程序化绘制。实验结果分析验证了计算方法的可行性。 Models of the position and tool forces of backhoe hydraulic excavator were built based on the full analysis of kinematics, kinetic performance of working device and mathematic model of tool forces. Various restrictive factors of tool forces, which appeared in the work process, were discussed. A computation program based on VB 6.0 was compiled, which was used to calculate tool forces in any position of the working area. Computer plotting of drawing mine map that was divided by restricting factors was realized. The experimental results demonstrated the feasibility of this method.

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