

收获机械往复式切割器切割图的数值模拟与仿真

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关键词: 收获机械 往复式切割器 切割图 数值模拟

摘要: 通过对往复式切割器工作原理的分析, 利用Matlab软件对切割器切割图进行了数值模拟。对影响切割图各区域面积的关键参数进行了仿真计算, 得到了提高切割质量、降低功率消耗的较优运动参数和结构参数组合。方差分析结果表明, 切割器类型、割刀进距、动刀片刃部高度对空白区和重割区面积影响显著, 动刀片宽度、前桥宽度对面积影响不显著。Cutting pattern of a reciprocating cutter was numerically simulated by using Matlab package. A set of optimized parameters related to kinetics and structure of the cutter were obtained by the simulation. The system constructed by these parameters will achieve a high cutting quality and a low power consumption. The results of variance analysis indicate that the cutter type, feed rate and height knife-edge have big influence on the areas of missing and overlap regions.

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