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基于线框构图技术的采矿CAD参数图元的构造

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摘要: 讨论了采矿CAD系统引入参数图元的原因和参数图元的构造原则,研究了采矿CAD系统中参数图元的构造及其描述方法.此外,根据参数图元的定义机制和参数图元库的组织,研究了参数图元规范化问题、相对坐标与绝对坐标的混合定义、有参图段和无参图段的定义、图段的连接、参数图元与数据模型的关系5个关键问题,提出了一个“可变量记录”参数图元库结构组织方案,并以半圆拱巷道为例给出了采矿CAD参数图元定义方法.该参数图元的构造方案在一个基于线框构图技术的采矿CAD软件开发中实现.本方法对提高采矿CAD系统的通用性和作图效率具有一定的理论意义和实用价值.

关键字: 采矿CAD; 参数图元; 线框构图技术

Constructing parametric graph element for mining CAD system based on line-frame technology

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Abstract: This paper studies the parametric graph element constructing and its describing methods for mining CAD system, and discusses the functions and constructing principle of parametric graph element for mining CAD system. Through defining and organizing parametric graph element, the authors studies the following five key questions, i.e., parametric graph element standardization, relatively coordinate and absoluteness coordinate mix definition, with parametric drawing but with out parametric drawing definition, drawing segment connecting, relationship between parametric graph element and data model. A new approach of parametric graph element structure organizing with changeable record is presented. The approach has been implemented in a mining CAD software based on line-frame technology. An example to define parametric graph element for half-circularity arch laneway was provided. This method can improve the capability of mining CAD system in usability and drawing efficiency.

Key words: mining CAD; parametric graph element; line-frame graph technology

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