

车身覆盖件CAD模型曲面缝合技术 Healing Method of CAD Geometric Model for Automobile Panels

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摘要: 修复车身覆盖件CAD数据是有限元分析前处理中的重要步骤, 针对车身覆盖件CAD模型中曲面缝隙问题, 采用NURBS技术对曲面缝合加以研究, 通过管柱算法快速判定匹配边界, 以基于特征的曲线合并方法完成曲面缝合, 并开发出曲面缝合算法模块。通过对汽车翼子板零件的缝合验证了算法的有效性。

Repairing of panel CAD geometric model is an important pre-processing step of the finite element analysis, and widely used in the computer-aided geometric design field. This paper focused on the surface healing method of panel CAD model, which was proposed and analyzed by NURBS technology. Firstly, matching-curves border was determined fast through the pipeline method, the surfaces were stitched by the matching-curves method with characteristics. On the basis of the algorithm, a surface stitching program module was developed. The validity of algorithm was verified by healing automobile front fender parts.

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