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### 腐蚀结构分析中腐蚀坑的随机布置和计算机模拟

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### Stochastic Arrange and Computer Simulation of Corrosion Pitting in Damage Structure

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摘要

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**摘要** 针对老龄化飞机安全评估分析中结构表面存在广布随机不等直径腐蚀坑这一现状,采用蒙特卡罗(MonteCarlo)方法分析并编制了计算机程序,完成了由结构腐蚀原况到计算模型的映射,从而实现了利用计算机模拟再现结构腐蚀损伤,为定量研究腐蚀损伤对老龄飞机结构的剩余强度和寿命影响提供可能。

**关键词:** 老龄飞机 腐蚀坑 统计分析 蒙特卡罗 混沌映射 计算机模拟 剩余强度

**Abstract:** In safety evaluation analysis of aged aircraft in corrosive environment, there are many widespread stochastic corrosion pits with different radii on structural surface. The ideal program, using Monte Carlo method, is compiled which is used to map the pitted structure to calculation model. The method can visualize the simulation of eroded status and provide a platform for computing the residual strength and life of the damaged structure with corrosion pits.

**Keywords:** aging aircraft pitting statistical analysis Monte Carlo chaotic mapping computerized simulation residual strength

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