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弹黏塑性材料稳恒扩展II型裂纹尖端应力场

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Tip Stress Field of Mode II Crowing Steadily in Elastic-Viscoplastic Materials

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摘要 参考文献 相关文章

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摘要 采用弹黏塑性力学模型,对II型动态扩展裂纹尖端应力场的对数奇异性,进行了分析计算。详细地分析了黏性系数a、马赫数Ma^2对裂纹尖端的应力场影响。指出了对数奇异性区域存在的问题,解释了过渡区的成因,对过渡区尖端场解的形式和求解方法做了合理的推测。

关键词： 弹黏塑性材料 黏性系数 马赫数 动态扩展 仿真分析

Abstract： An elastic viscoplastic constitutive mode is given in this paper. Based on it, the numerical computation of lnR/r singular in the mode II dynamic crack's tip field is carried out. The relationships between stress field distribution and viscosity coefficients and mach numbers are given. The problem existed in ln(R/r) singular zone is given. The cause of the transitional zone is given. The form of stress field in the transitional zone and it's solving method are guessed rationally.

Keywords： elastic-viscoplastic materials viscosity coefficient Mach number dynamic crowing simulation analysis

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