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电子直线加速器的温度瞬态问题

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摘要 文章运用逐步逼近法求出了电子直线加速器在升温过程中温度变化的较精确的解析解,并对一种U型水冷系统的加速器作了详细分析,从瞬态变化的角度讨论了这种水冷系统的性能,研讨了电子束能量变化及时间常数。结果与实验吻合。

关键词 温度瞬态 U型水冷系统 时间常数 逐步逼近法

分类号

ON THE PERFORMANCE OF ELECTRON LINAC UNDER TRANSIENT STATES OF TEMPERATURE

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Abstract By using the method of progressive approximation, the paper obtains a moreaccurate solution of the temperature distribution of an electron linac during therising of temperature. It also gives a detail discussion of a linac~[3] and of theproperties of its U-type cooling system during the transient process, and theenergy of the electron beam and the time constant.

Key words Transient states of temperature U-type cooling system Time constant Method of progressive approximation

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